4.01 EXISTING CONDITIONS REPORTS

2.1.01 CIVIL

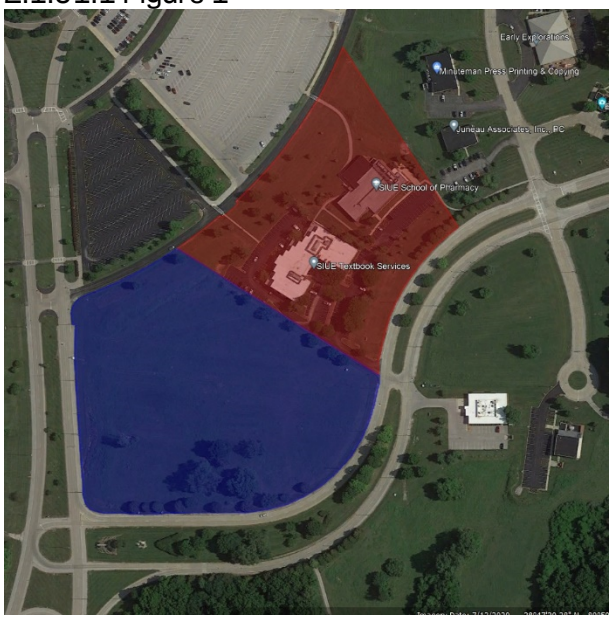
2.1.01.1 Existing Conditions

The approximately 17-acre site consists of a developed portion to the northeast and an undeveloped portion to the southwest.

The developed portion of the site is approximately 7 acres consisting of buildings, asphalt and concrete pavements, grassy areas, landscaping, and deciduous and evergreen trees of varying size. The developed portion of the site is currently served by potable water, electric, gas, telecommunications, and sanitary sewer. A storm sewer system consisting of inlets, conduits and ditches also provides the developed portion with a means of storm water management.

The undeveloped portion to the southeast is approximately 10 acres consists primarily of grassy areas and is sparsely populated at its periphery with deciduous and evergreen trees of varying size. Potable water, electric, gas, telecommunications and sanitary sewer are all accessible to the undeveloped portion.

2.1.01.1 Figure 1



Red represents developed area.
Blue represents undeveloped area.

2.1.01.2 Regulatory Requirements

It is anticipated that construction activities related to the project will result in the disturbance of greater than 1 acre of land. As such, it will be necessary to submit a Storm Water Pollution Prevention Plan (SWPPP) to the Illinois Environmental Protection Agency. The SWPPP shall meet the requirements set forth under Part IV of the National Pollution Discharge Elimination System (NPDES) permit No. ILR10 General NPDES Permit for Storm Water Discharge from Construction Site Activities.

2.1.01.3 Environmental Impact

The project location boundary was submitted for review by Illinois Department of Natural Resources through the EcoCAT tool as an informational only project planning submittal. The results from the EcoCAT review were such that no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves or registered Land and Water Reserves were found in the vicinity of the project location.

2.1.01.4 Flood Plain Construction Policy Compliance

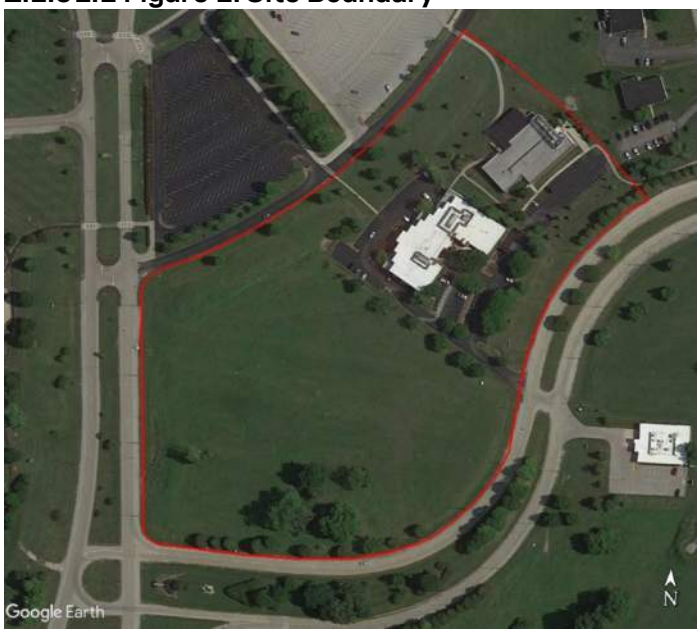
According to FEMA Flood Insurance Rate Maps (FIRM), no portion of the project area lies within a flood hazard zone. The entirety of the project site is denoted on the relevant flood map as an area of minimal flooding.

2.1.02 SITE AND LANDSCAPE

2.1.02.1 Location

This Southern Illinois University Edwardsville (SIUE) Health Sciences Assessment Report considers the landscape within the property boundaries of SIUE Building 200 and Building 220, located on University Drive in Edwardsville, Madison County, IL. This assessment also takes into consideration provided campus standards and connections to the rest of the SIUE campus

2.1.01.1 Figure 1: Site Boundary



2.1.02.2 Purpose of Assessment

The SIUE Buildings 200 and 220 site conditions assessment are being performed as part of a Programming Analysis for HOK Architects. The Program Analysis is considering three options for the SIUE Health Sciences Department to renovate and reuse one or both existing building as well as new adjacent construction. This report addresses the site conditions observed surrounding the building site(s) during a site walk in the fall 2021

2.1.02.3 Description of the Project Site(s)

The SIUE Buildings 200 and 220 are oriented to the south-west of campus, off of University Park Drive. The buildings are surrounded by lawn and accented with a few shade trees. A path between building 200 and 220 leads to a memorial garden,

as described elsewhere in this report. From the entry, the sight slopes down to the north-west. A large berm is located between the back of building 200 and 220 and the campus parking lots.

2.1.02.3.1 Existing Parking Spaces Building 200 and Building 2021 Combined

The parking lot material is asphalt and there are 160 parking spots for building 200 and 220. Out of the 160 parking spots there are 8 handicap spots. Building 200 has service access and a loading dock on the south-west end and Building 220 has service access on the north-east side of the building. The only access to building 220 is through the entry drive for building 200. The parking lot for 220 ends in a hammerhead formation instead of continuing to the adjacent parking lot. From the parking lot, the entrance to building 200 is approximately 85 feet and the entrance to building 220 is approximately 45 feet.

2.1.02.4 Building 200 Site & Site Elements

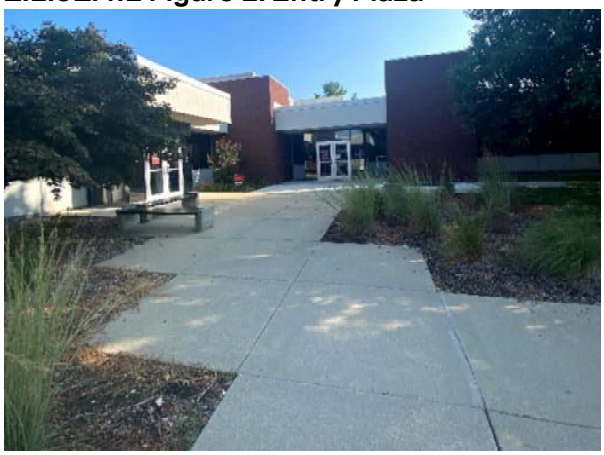
Building 200 has an entry plaza with planting beds, trees and benches. This building has more parking spaces than building 220 and there is parking on three sides of the building. On the north-east side of the building, a vegetated stormwater swale runs parallel to the building face. Between building 200 and 220 is a sidewalk that connects pedestrians from the parking lot to a memorial garden and then to another sidewalk along the back of the building. A lawn berm divides the campus parking from the building. The berm runs parallel to the building's north-west façade, visually shielding the building from the rest of SIUE campus.

2.1.02.4 Figure 1: Site Boundary for Building 200

2.1.02.4.1 Entry Plaza

The paved entry plaza is spacious with multiple planting beds including ornamental and shade trees. Overall, the plant beds are underutilized and underpopulated with plant materials. The plaza pavement is concrete and in some locations the concrete has been repoured resulting in mismatched coloration of the pavement. There are four backless benches in the entry plaza.

2.1.02.4.1 Figure 1: Entry Plaza



Entry plaza view facing the main doors

2.1.02.4.2 Hardscape & ADA access

There is ADA access from the parking lots to the entry of the building but in some spots, users have to walk behind vehicles to access the ADA entry. The paving material in these walk areas is concrete.

2.1.02.4 .2 Figure 1: ADA Parking Spot

ADA parking spot with no immediate ADA accessible path

2.1.02.4.3 Site Amenities Areas

A memorial garden is situated between buildings 200 and 220 on the north side of the buildings. The garden has robust, established plantings. Within the garden are memorial pavers. Surrounding the memorial garden are three memorial trees with plaques and a bench that is dedicated to the Pharmacy Class of 2020.
To the west of the memorial garden are three picnic tables located in the grass under pine trees. The tables are in between the edge of the parking lot and a swale with a drain inlet. The location of the picnic tables feels secluded from the main campus due to the visual barrier provided by the berm.

2.1.02.4.3 Figure 1: Memorial Garden

Memorial garden and commemorative bench

2.1.02.4.3 Figure 2: Memorial Tree and Plaque

2.1.02.4.3 Figure 3: Memorial pavers

Memorial pavers within the memorial garden

2.1.02.4.3 Figure 4: Picnic Tables

Picnic tables under the pine tress adjacent to parking lot

2.1.02.4.4 Site Lighting & Emergency Call Button

Overhead parking lot lighting was identified on site and pedestrian bollard lighting is present on the north of building 200 and 220. There was no emergency call button located on site.

2.1.02.4.4 Figure 1: Bollard Light

Pedestrian bollard light near memorial garden

2.1.02.4.5 Site Furnishings

The furniture on site is varied in form, manufacturer and materiality. The picnic tables are a thermoplastic coasted steel, black colored. The benches in the entry plaza are backless with a concrete base and a composite seat. The commemorative bench within the Memorial Garden has a black steel base and red composite seating and back. The bicycle rack present on site does not match the designated campus standard. It is sun worn with paint flaking and black, versus the continuous ribbon configuration with double sided parking as recommended by campus standards. There is only one trash receptacle on site, well to the periphery of the project boundary, facing the parking lots adjacent.

2.1.02.4.5 Figure 1: Picnic Tables

2.1.02.4.5 Figure 2: Entry Plaza Benches

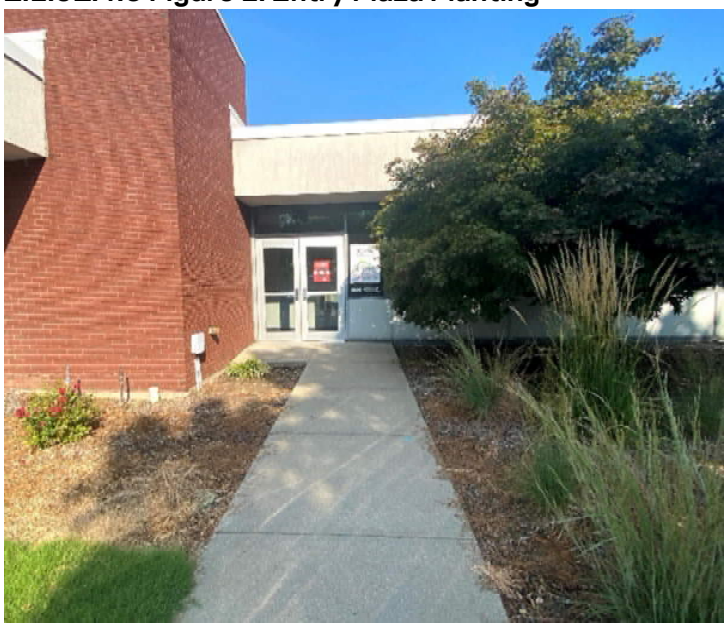
2.1.02.4.5 Figure 3: Commemorative Bench

2.1.02.4.5 Figure 1: Bicycle Parking

2.1.02.4.6 Plant Material

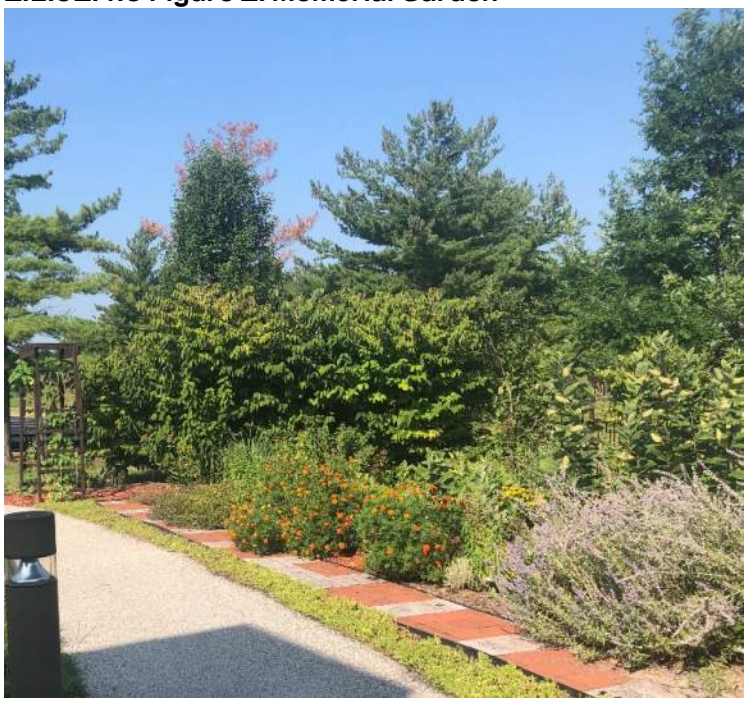
The majority of the planted areas on the site are turf, but where there are planting beds, the plants are primarily native. Within the memorial garden a mix of native prairie species are used. The areas where a swale is located is a mix of turf grasses in lieu of a specific bioretention plant mix.

2.1.02.4.6 Figure 1: Entry Plaza Planting



Planting mixture of native plants, shrubs and ornamental trees

2.1.02.4.6 Figure 2: Memorial Garden



A mixture of native plants and shrubs are placed in the garden

2.1.02.4.6 Figure 3: Bioswale

The bioswale parallel to the building is planted with turf grass

2.1.02.4.7 Signage

The building entry signage does not match the indicated campus standard and is placed between the two buildings.

2.1.02.4.7 Figure 1: Entry Signage

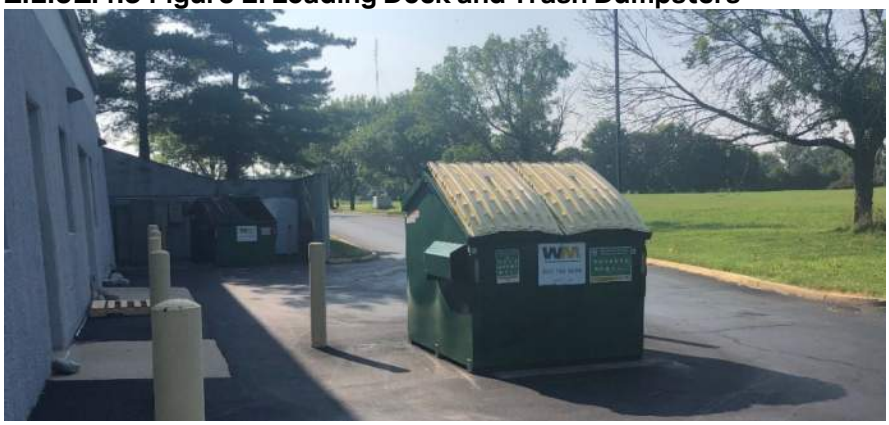
2.1.02.4.8 Irrigation

No observed irrigation, backflow preventers, hose bibbs or other controllers were identified on site

2.1.02.4.9 Vehicular Access and Campus Connections

To connect back to the main campus, a sidewalk leads from the north parking lot to the fan parking lot sidewalk system, refer to 5.1.01.4 Figure 1. To access the north parking lot, vehicular visitors must use the main entry drive. While accessing the north parking lot users, have to pass the service loading dock and dumpsters.

2.1.02.4.9 Figure 1: Loading Dock and Trash Dumpsters



2.1.02.5 Building 220 Site & Site Elements

On the south-west side of the building a swale runs parallel to the building face. Between building 200 and 220 is a sidewalk that connects pedestrians from the parking lot to a memorial garden and then to another sidewalk along the back of the building. A patio is located on the north west side of the building with bicycle parking and picnic tables. A berm divides the campus parking from the building. The berm runs parallel to the buildings north west façade shielding the building from the rest of SIUE campus. To the north east of building 220 is a large bio-detention area where water run-off from the campus collects.

2.1.02.5 Figure 1: Building 220 Site Boundary

2.1.02.5.1 Entry Plaza

The entry into building 220 is below grade with a modest pedestrian plaza. The entry is paved with concrete, including stairs and ramp. Surrounding the entry is a landscape bed that is planted with trees and mulched.

2.1.02.5.1 Figure 1: Sunken entry Plaza

2.1.02.5.2 Hardscape & ADA access

There is ADA access from the parking lots to the ramp for the building entry. All walkways are concrete and accessible for users. All paving material is concrete.

2.1.02.5.3 Site Amenities Areas

Reference section 5.1.01.4.3 for information regarding the memorial garden.

To the east of the memorial garden are picnic tables and a bike rack on a sunny patio. The tables and bike rack are adjacent to the north entry into building 220. The location of the picnic tables feels secluded from the main campus because as the berm provides a visual barrier.

2.01.2.3 Figure 1: Picnic Tables and Bicycle Parking

Picnic tables on a patio with an unusable bicycle parking rack in between them

2.1.02.5.4 Site Lighting & Emergency Call Button

Reference 5.1.01.4.4

2.1.02.5.5 Site Furnishings

Reference 5.1.01.4.5 regarding the picnic tables and commemorative bench. Reference 5.1.01.5.3 for bicycle parking and picnic tables. A single trash receptacle is located on the north sidewalk where the site connects to the campus parking. The trash receptacle does not match the campus standard.

2.1.02.5.5 Figure 1: Trash Receptacle

2.1.02.5.6 Plant Material

Reference 5.1.01.4.6 In areas with a swale, a mix of turf grasses and small woody shrubs were present.

2.1.02.5.6 Figure 1: Bioswale

Bioswale with small woody shrubs

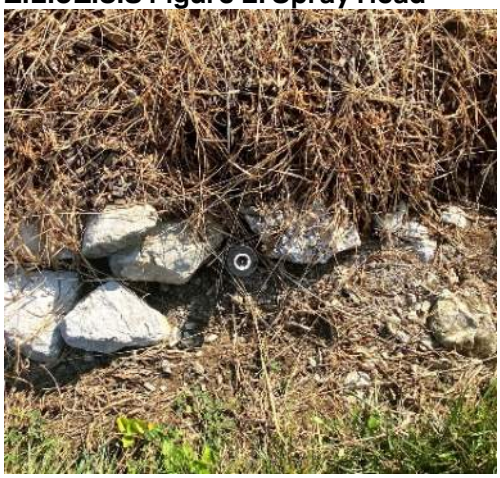
2.1.02.5.7 Signage

Reference 5.1.01.4.7

2.1.02.5.8 Irrigation

Spray heads were located along the edge of the swale that runs parallel to the buildings south west façade. No other spray heads were located on site.

2.1.02.5.8 Figure 1: Spray Head



Spray head at the edge of the bioswale

2.1.02.5.9 Vehicular Access and Campus Connections

To connect back to the main campus, a sidewalk connects from the north parking lot to the fan parking lots sidewalk system, refer to 5.1.01.5 Figure 1.

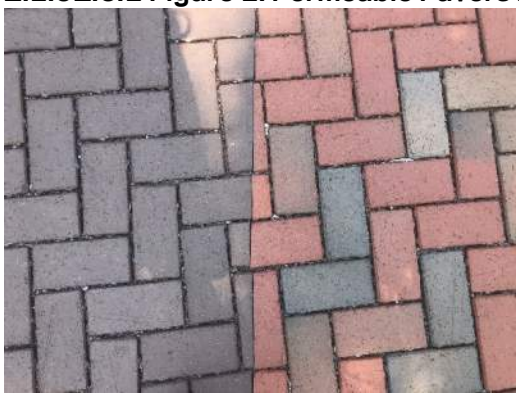
2.1.02.6 Recommended Improvements

As observed, the site and its amenities are not in keeping with SIUE Campus Standards. The following applicable design standards have been provided by SIUE (John Renken) fall of 2021:

2.1.02.6.1 Pavement

- Provide width, thickness and reinforcing in concrete walks to support maintenance vehicles and snow clearing equipment.
- Provide transitions at intersections sufficient for vehicle turns that are not 90 degrees.
- Concrete pavement of appropriate thickness shall be used in the construction of the service drives.
- Pathways that cross the main roads shall have an accessible sloped concrete transition between the path and the roadway, built in accordance with the latest version of the Illinois Accessibility Code.
- Areas on main campus has pavers that are on subbase that is impermeable and some pavers are installed on permeable base.

2.1.02.6.1 Figure 1: Permeable Pavers in Central Campus



2.1.02.6.2 Figure 2: Impermeable Pavers in Central Campus

2.1.02.6.2 ADA access

- Crosswalks shall be standard painted walks with red truncated domes
- All applicable ADA requirements shall be follow in compliance with Code and current best practices

2.1.02.6.2 Figure 1: Red Truncated Dome Strip

2.1.02.6.3 Pedestrian Lighting

Pedestrian lighting shall be updated to meet the campus current design standards as of fall 2021.

- Lighting manufacturer is Gardco. LED requirements include photometric report per IESNA LM-79-08 for the latest generation system being furnished, including independent testing laboratory name, report number, date, luminaire model number, input wattage, luminaire, and light source specifications. Manufacturer origin of LED chipset and driver shall be submitted. Leed requirements is the reduction of light pollution with data showing percentage of light lumens emitted at or above 90° from nadir for each luminaire type and the reduction of toxic material.
- Luminaires shall utilize LED source wherever possible; any deviations shall be approved by Owner. Actual light fixtures shall be selected by the project

Architect and approved by the Owner at Schematic Design. All lighting densities in all areas shall be in compliance with the latest adopted IES (Illuminating Engineering Society) recommendations and the IECC (International Energy Conservation Code).

- In-grade luminaires shall have lamp/optic separation to prevent surface temperature from exceeding 115°F. Compartment separation of wire entry and control gear/lamp chamber.

2.1.02.6.3 Figure 1: Campus Standard Light

2.1.02.6.4 Bike Racks

Bicycle racks need to be updated to meet the campuses current design standards as of fall 2021.Bike rack manufacturers are as follows:

- A A A Ribbon Rack Co., Inc.; Division of Brandir International, Inc.
- American Bicycle Security Company.
- BRP Enterprises, Inc.
- Columbia Cascade Company.
- Creative Pipe, Inc. 6. DuMor Inc.
- The frame is 2-3/8 inch OD galvanized Schedule 40 steel pipe with powder coating finish. All welded construction. The shape is a continuous ribbon configuration with double sided parking and no fewer than 10 bicycles per section. Installed with cast into concrete.

2.1.02.6.5 Plant Material

- Currently SIUE's campus is primarily dominated by lawn and trees, resulting in consistent mowing by the in-house maintenance team.
- When other plant material is used, it is preferred for the vegetation to be native-focused.
- There is no preferred material list provided as of fall 2021

2.1.02.6.6 Signage

Signage shall be updated to meet the campuses current design standards as of fall 2021.

2.1.02.6.9 Figure 1: Campus Standard Signage

Wayfinding sign along University Drive

2.1.02.6.7 Bus Shuttle

Madison county provides bus shuttles and schedules. On campus there are several bus stops and shelters but none near the site. A proposed bust stop and shelter is suggested for the expansion.

2.1.02.6.7 Figure 1: Campus Bus Shelter

One of the Madison County bus shelters located near residential zone

2.1.02.6.8 Art

SIUE has student artwork on display in a 2-year rotation. There are no set locations for art, so concrete piers are poured when needed.

- The CDB has a set budget for art separate from the student art work.
- The proposed design should have available space for art.

2.1.02.6.9 Safety

SIUE's has emergency safety 'blue lights' that are SIUE red and placed throughout campus.

- Cut sheets have not been provided as of fall 2021.

A firehouse is located on campus and design requires truck access to hydrants and buildings.

2.1.02.6.9 Figure 1: Campus Standard Safety Light

2.1.03 ARCHITECTURE AND INTERIORS

2.1.03.1 Overview

This assessment addresses the exterior and interior architectural components of two existing buildings on the SIUE campus, known as Building 200 and Building 220. This report is based solely on visual observation of the buildings and does not involve any testing, removal or demolition of existing components, or other invasive methods to determine existing conditions.

2.1.03.2 Building 200

Based on construction drawings provided and dated 1990, Building 200 is approximately 30 years old. The building is constructed primarily of concrete and metal panel exterior walls, steel framing, gypsum board finished interior partitions, and appears to be a non-combustible construction type. The building is not sprinklered and utilizes a compartmentalization strategy for life safety requirements.

Situated on a sloping site, this two-level building has at grade entrances for both levels on opposite sides of the building. The levels are connected internally by one stair and one elevator. The lower level consists primarily of classrooms, offices, and a large open space currently being utilized for textbook services. The upper level is divided into three distinct, non-connected areas consisting of private and open office space. Each space has a dedicated exterior entrance off the main plaza. There are two separate open-air terraces provided by the smaller footprint of the upper level. These terraces are accessed by open exterior stairs or doors directly from the office suites.

2.1.03.2. Figure 1: Building 200 Exterior

2.1.03.2.1 Exterior

The lower level walls of building 200 are primarily cast in place concrete, sloped outward from the vertical plane, with a vertical ribbed, bush-hammered finish. Where lower level walls are not aligned with upper level walls they extend vertically to create parapet guards/fall protection at the upper level terraces. These walls appear to be in fair condition with some cracking, spalling, and peeling paint finishes. Raw concrete is exposed in several areas. Some cracks are significant and may indicate water penetration into the wall assemblies. Refer to the structural assessment for specific observations of concrete walls. Where grass lawn is adjacent to the building there is residual discoloration and finish failures resulting from lawn maintenance. There are some areas, particularly on the north end of the building, where walls are showing signs of mold growth and discoloration from contact with the trees and plantings touching the building.

2.1.03.2.1 Figure 1: Examples of cracking, spalling, and failing finishes

Openings at the lower level consist of punched window assemblies built in cast wall openings, storefront vestibules and entrance doors at the primary entrances, and hollow metal doors at secondary entrances. Punched windows are metal framed double pane assemblies. Heavy perimeter sealant is aged and displays cracking, shrinking, discoloration, and is missing in some areas. Some joints at metal frames have significant gaps. Gasketing at these windows is partially missing at several instances. Air can be felt passing through the window assemblies where gasketing is compromised. These areas are also susceptible to water penetration into the wall assembly.

2.1.03.2.1 Figure 2: Window Frames at Lower Level

Two entrances to the lower level are similar installations of storefront framing, glazing, and doors creating vestibules set back from the face of the wall in concrete and stucco finished insets. Doors, landings, and thresholds are displaying signs of age but are in good condition. Some components such as door bottom rails and hardware may not be considered in compliance with current accessibility codes and standards. Some retro fitting such as door actuators are installed in some locations which may address door hardware and function concerns. Hollow metal doors servicing the south wall of the building are in good condition. Door leaf and hardware finishes show signs of age such as chalking and pickling, and normal wear and tear for a shipping and receiving area. Concrete walks and landings at the lower level are in fair condition with some sinking and heaving displayed, and missing sealant at areas such as where the walk is adjacent to the building.

2.1.03.2.1 Figure 3: Lower Level Entrance

Upper level exterior walls are primarily insulated metal panel and double pane glazing assemblies, with brick towers at the primary entrances. A generous overhang at the roof level has soffit and fascia finished with stucco and terminates with metal coping and fascia systems at the roof edge. The soffit and fascia is discolored and streaked from moisture and sun exposure. Similar to the lower level walls, at the north end of the building the soffit and fascia is displaying signs of mold and other surface growth and discoloration where the trees touch the building. Sealant at the soffit is quite aged and discolored, cracked, missing, or pulled away from the building. This is typical for the entire soffit around the building.

Metal panel and glazed wall assemblies are in fair condition. Glazing gaskets are aged but complete and no indications of cracking or seal failure were observed. Metal panel finishes are aged and finishes are oxidized showing chalking, fading, and discoloration. Some minor damage to the metal panels has resulted in dents and rust in several locations.

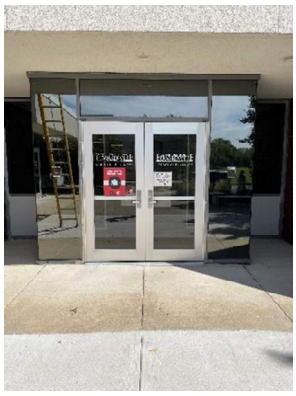
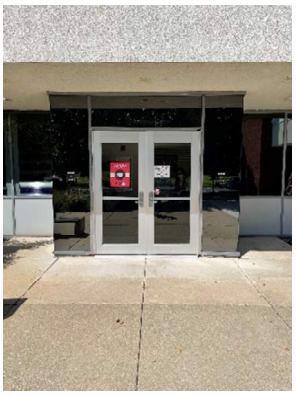
2.1.03.2.1 Figure 4: Partial East Elevation

The upper level interior spaces are accessed from an entry plaza of concrete walks and landscaping. Entrances to the two larger spaces are glazed vestibules. Vestibules are butt-jointed single pane assemblies with aluminum storefront entry doors. Vestibules are in poor condition with gasketing and sealant missing or pulled away from the glazing and metal framing system. Solar control film at the interior is deteriorating and coming off the glazing. Retrofits on the doors display plates and screws crudely installed. Door and hardware finishes are pitted and discolored.

The third entrance to the upper level is a pair of storefront doors opening directly into a corridor. The concrete walk leading to this door is sloped and does not offer an appropriate landing at the exterior.

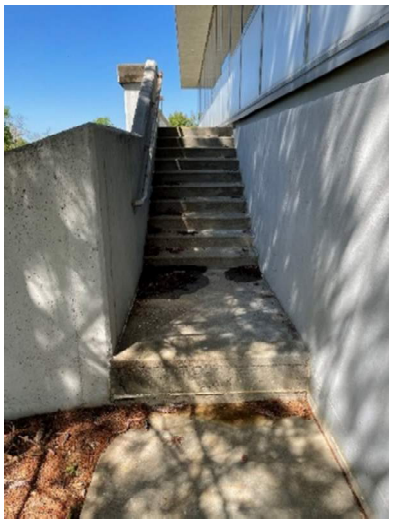
Concrete walks at the entry plaza are showing signs of shifting, there are multiple instances where the concrete has pulled away from the building and the sealant and/or wood filler strips are missing. Thresholds, door bottom rails, and door hardware may not be considered in compliance with current accessibility codes and standards.

2.1.03.2.1 Figure 5: Upper Level Entrances


Exterior concrete stairs provide access to the upper level terraces at both the north and south ends of the building. At the south stair the concrete stair run is in good condition, however, the lower level landing has sunk far below its original elevation creating a very tall first riser. There are metal handrails at one side at each stair, each with deteriorated finishes. Handrails are approximately 32 inches above stair nosings and landings. The parapets of the lower level walls act as fall protection guards at the terraces. These walls are approximately 36-40 inches above the terrace walking surfaces. Finishes on the parapet walls are failing, displaying significant peeling and cracking, with several areas of exposed raw concrete. Precast concrete caps at terrace parapet walls are in good condition showing discoloration from age, joints appear to be maintained but in need of new sealant.

2.1.03.2.1 Figure 6: South Stair to Exterior Terrace Level



Walking surfaces at the terraces have exterior traffic-type coating that is in poor condition and quite discolored. Several areas of the terraces had pooling water and inadequate drainage despite internal drains in the terrace walk. The interior floor elevation is approximately nine inches above the terrace walk surface. There are no landings at the doors from the office suites. The doors are a variety of styles with varying stile and rail framing. Some door and frame finishes are aged and display chalking, oxidation, rust, and pitted hardware. Door hardware, bottom rail heights, and the lack of landings indicate these doors may not be considered in compliance with current accessibility codes and standards.

2.1.03.2.1 Figure 7: Typical Terrace Conditions




The brick wall towers at the three upper level entrances extend above the roofline creating a three-sided projection capped with metal coping. The coping finishes have deteriorated, and large areas of the coping are rusting. Coping joints appear to be missing straps in some locations. Sealant at the masonry is aged, cracked, discolored, missing in some areas, and pulled away from adjacent surfaces in many areas.

2.1.03.2.1 Figure 8: Typical Masonry Parapet Walls

The roof is accessed from the exterior of the building. There is no fixed roof ladder or roof scuttle. The roof is a no parapet, low-slope system with a white membrane, singular internal roof drains, and a versico edge fascia. Where the membrane meets the brick parapet walls there is an upturn of approximately 16 inches with termination bar, flashing, and sealant. Sealant in these areas is failing due to age. Flashing at the upturn is discolored and streaked from rusting fasteners. There are some areas where discoloration of the membrane indicates ponding, and areas not receiving direct sunlight have signs of mold and other surface growth. There is no discernable overflow system for roof drainage. Bulges in the membrane were observed, primarily at the perimeter of the roof. The roof membrane overlaps the expansion joint that runs through the building, no visual access to this joint is available. Roof penetrations are treated with standard boot accessories or built up curbs. Sealant at penetration assemblies is failing due to age.

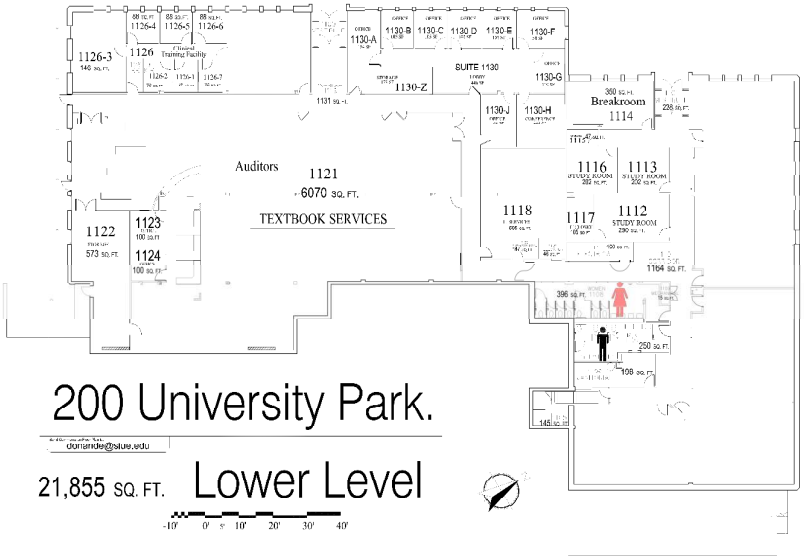
Rooftop units are screened by steel tube framed ribbed sheet metal panel mechanical equipment screens. Framing steel finishes have deteriorated, and all surfaces are rusting. The metal panels are streaked from rusting framing and fasteners. Refer to the mechanical assessment for specifics on rooftop equipment.

2.1.03.2.1 Figure 9: Typical Architectural Roof Components

2.1.03.2.2 Interiors

The lower level floor plan is divided into two distinct office suites, a large open area for textbook services, large classrooms supplemented by smaller group study rooms, a significant IT space, and support spaces such as toilet rooms, break room, and utility spaces.

2.1.03.2.2 Figure 1: Lower Level Floor Plan



Lower level vestibule entrances open into the long, singular double-loaded corridor that services the interior spaces. The corridor floor finish is a recently

installed resilient sheet product. Floor finish was in good condition with no observed installation issues. Corridor ceilings are suspended 2x4 acoustic ceiling tile with lay-in light fixtures and ceiling devices. This ceiling is in fair condition but showing signs of age such as sag, fading, and damaged tiles. This ceiling finish is typical throughout the lower level, with the exception of some remodeled spaces which have more recent installations. All interior partitions are gypsum board finished, except for the multi-fixture toilet rooms which are ceramic tile finished. Exterior walls are gypsum board finished in public areas, with painted concrete and cmu in the stair shaft. Door hardware such as the kickstops on the toilet room doors may not be considered in compliance with current accessibility codes and standards.

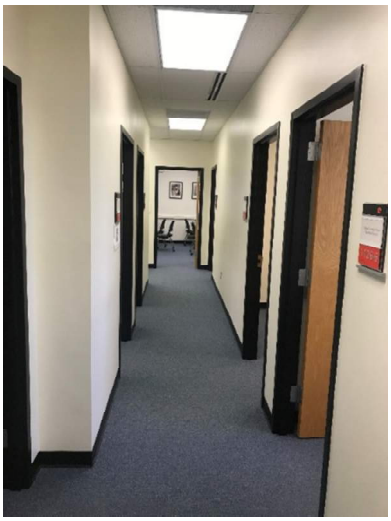
2.1.03.2.2 Figure 2: Typical Lower Level Corridor and Toilet Room Finishes

Most corridor doors and frames appeared to be fire rated hollow metal, there were several instances where identifying labels have been painted over. A rated pair of double egress fire doors were observed at approximately the location of the building expansion joint, indicating a separation of fire areas within the building.

2.1.03.2.2 Figure 3: Lower Level Corridor Doors

Typical office suite finishes are carpet floor covering, vinyl wall base, painted gypsum board walls, and suspended acoustic tile ceilings. Doors within office suites are typically wood flush panel with hollow metal frames. Office suite finishes are generally in good condition and appear to have been upgraded and well maintained over the life of the building. There are some areas that are showing signs of age, such as the plastic laminate window stools delamination, and the sealant at exterior window frames shrinking and pulling away from adjacent surfaces.

2.1.03.2.2 Figure 4: Typical Office Suite Finishes



The space currently utilized by textbook services is a large open room with shelving and transaction counters, a storage room, and a small office package. The floor finish is an aged 12x12 vinyl tile, vinyl wall base, painted gypsum board walls, and suspended 2x4 acoustic tile ceiling. Most light fixtures and lay-in, but some surface mounted fixtures have been added, apparently to align with the shelving layout. Several of these fixtures were observed as overlapping a lay-in slot diffuser. The storage room off the main area is unfinished except for a small office area with partially finished wall furring and insulation boards attached to the underside of the roof deck. A small office package shares a common wall with the storage room. A pair of hollow metal doors opens directly from the main floor to the exterior loading area.

2.1.03.2.2 Figure 5: Textbook Services Space

The Breakroom, smaller classrooms, and study rooms have finishes similar to textbook services. The older vinyl tile flooring in the rooms meets the newer corridor flooring with no transition strips. The breakroom has laminate casework including a countertop and sink. The dimensions and approach to the sink may not be considered compliant with current accessibility codes and standards. Casework in the breakroom is dated but still serviceable.

The Large Classrooms have heavily worn and discolored carpet floor finishes well beyond their life span. The remaining finishes are typical vinyl wall base, gypsum board walls, and suspended acoustic tile ceiling. Finishes in these areas show more wear and tear than office spaces, and window assemblies have similar issues with the laminate window stool and the sealant at the frames.

2.1.03.2.2 Figure 6: Typical Small Group Room

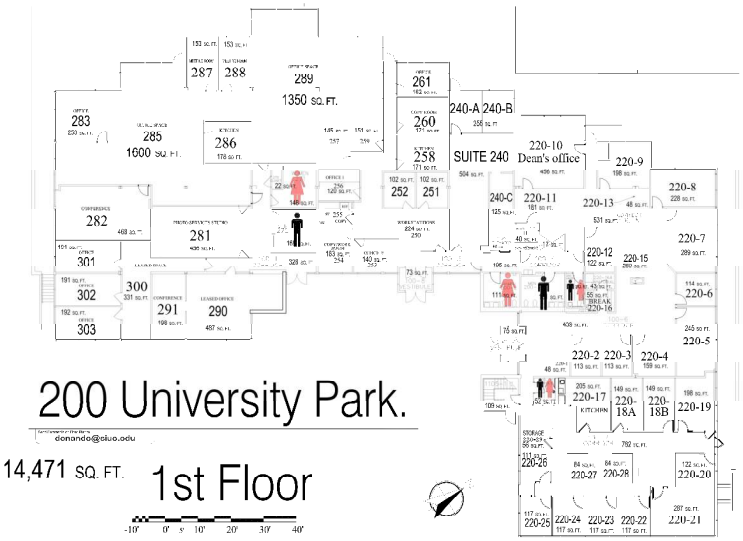
2.1.03.2.2 Figure 6: Typical Classroom

All offices and instructional areas have power and data upgrades as observed by equipment such as cameras, projectors, audio and computer systems, wireless access points, and visible wiring. Some retrofits are not well integrated and simply run under the carpet, plastic coverguards, or otherwise exposed to foot traffic.

It was observed that the elevator equipment room appeared to have fire and smoke dampers installed at mechanical penetrations, but the partitions encompassing the room are incomplete and do not fully extend to the floor deck above.

The upper level floor plan is office space with varying sizes of open floor areas, private offices, conference rooms, and support spaces such as toilet and break rooms, storage, and equipment spaces. The metal panel and glazed exterior walls provide generous natural light and views to the perimeter spaces. Almost all suites have access to the semi-private exterior terraces.

2.1.03.2.2 Figure 7: Upper Level Floor Plan

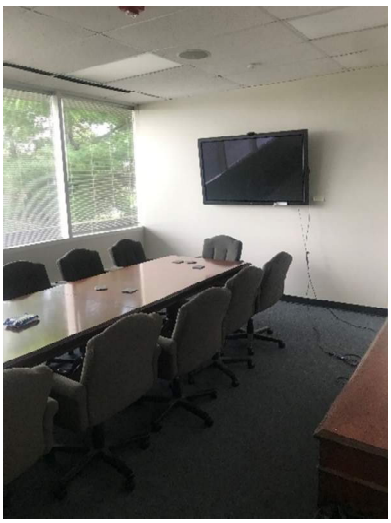


Floor finishes in the upper level are predominately carpet with some areas of 12x12 vinyl tile in break rooms and storage/copy rooms, and ceramic tile or resilient flooring in toilet rooms. Carpet floor covering is in poor condition, discolored, stained, and heavily worn in high traffic areas, with some areas of bulging and wrinkling creating tripping hazards. With few exceptions, ceilings throughout the upper level are suspended acoustic tile. The ceiling finish on the upper level is in much poorer condition than the lower level. There are multiple instances of discoloration, staining, evidence of water leaks, and damaged or missing ceiling tiles and grid.

2.1.03.2.2 Figure 8: Typical Upper Level Finishes

Corridor and office suite finishes are carpet, vinyl wall base, and painted gypsum board. Corridor doors are typically fire rated wood or hollow metal with a variety of lite configurations. The entrances to some suites have large sidelites allowing views from the corridor. Within the office suites doors are typically wood, flush or with varying lites, and hollow metal frames. At the perimeter walls the window stool appears to be painted metal. A small room adjacent to the elevator was identified as a server room, and contained a small rack and household fan, but no discernable mechanical cooling system.

2.1.03.2.2 Figure 9: Typical Upper Level Finishes



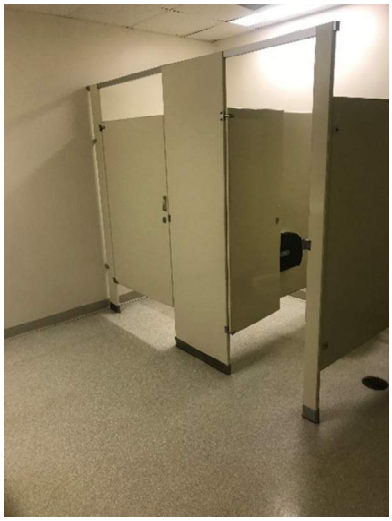
Support spaces such as break and copy rooms contain laminate casework that is dated but in fair condition and serviceable. Some breakroom casework

configurations and sinks may not be considered accessible by current codes and standards.

2.1.03.2.2 Figure 10: Typical Upper Level Breakroom

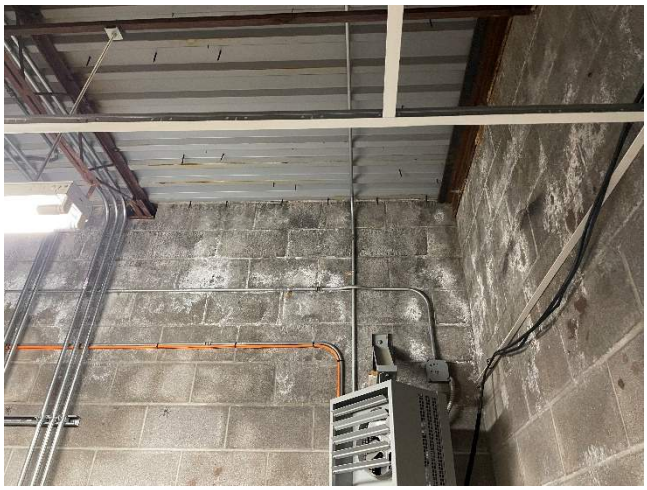

In general, Bldg 200 toilet rooms have components and installations that may not be considered in compliance with current accessibility codes and standards. However, it did appear that most toilet rooms could be upgraded to current standards without major renovations. Toilet rooms finishes are dated, discolored, and showing high levels of wear and tear.

2.1.03.2.2 Figure 11: Typical Upper Level Toilet Rooms

Where visible, exposed roof deck and framing with rust and indications of water intrusion was observed. An electrical room within the brick tower adjacent to the south entrance has exposed interior cmu walls with staining, discoloration, and efflorescence indicating water intrusion from the roof.

2.1.03.2.2 Figure 12: Indications of Water Intrusion in Electrical Room



2.1.01.3 Building 220

Based on construction drawings provided and dated 2004, Building 220 is approximately 15 years old. A later addition with construction drawings dated 2008 expanded the building to the west. Both portions of the building utilize steel framing, gypsum board finished interior partitions, storefront and punched opening glazed assemblies, and primarily exterior cavity walls with a masonry veneer. There is a panelized rain screen system on the northeast facade facing University Park Drive. Several areas of the building interior are open to structure with exposed steel framing. The building appears to be a non-combustible construction type and fully sprinklered.

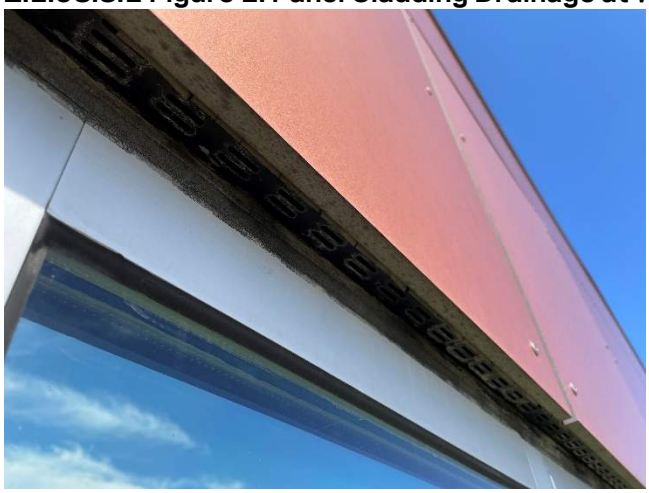
The main entrance to this single level building is on the lower portion of the site facing the core campus and is only accessible by concrete walking paths. Directly opposite the main entrance there is access to the parking lot fronting University Park Drive, and at the end of the L shaped corridor is a pair of hollow metal doors opening onto the building service drive.

2.1.03.3. Figure 1: Building 220 Exterior

2.1.03.3.1 Exterior

At the northeast corner of the building the finish floor elevation is well below grade and the exterior wall reflects this with a concrete stem wall showing above grade to the sill height of the punched window openings. At the north end where the grade begins to drop this stem wall transitions to a cavity wall clad with the same large format cmu used at the parking lot entry wall and at the north wall next to the service drive. At the foundation wall this cmu has deteriorated and shifted displaying cracking and out-of-plane blocks. Above the stem wall is a laminated panel rainscreen cladding system that terminates with metal coping at the parapet. The panels are in good condition showing normal aging and minimal discoloration. There is observable delamination at the back side of the panels. The drainage channels in the cladding system appeared to be open and functioning, but some areas appeared to be directing water toward the window frame assemblies.

2.1.03.3.1 Figure 1: Panel Cladding Drainage at Window Head



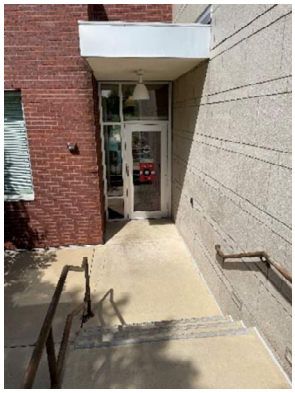
The metal sill flashing at the base of panels/top of stem wall is back pitched, directing water towards the window frame sills and base of panel wall. This flashing is butt-jointed and does not appear to have any counter-flashing or redundancy in the joint system. Sealant at these joints has failed and separated from adjacent surfaces or is missing. The joints are further exposed by warping and twisting of the sill flashing resulting in significant gaps. Residual water and wet organic matter from the lawn were observed under the panel cladding on top of the sill pan. At the metal framed windows perimeter sealant is aged beyond its lifespan, cracked, pulled away from adjacent surfaces. These conditions are prone to directing water into the exterior wall assemblies.

2.1.03.3.1 Figure 2: Sill Flashing at Panel Cladding and Windows

Where pedestrian access from the parking lot reaches the building there is a change in wall materials to the large format cmu at the wall adjacent to the storefront entrance door. Red brick veneer with a distressed texture begins at this inside corner and continues around the remainder of the building, apart from an area of the panel cladding next to the main entrance on the opposite side of the building. The change in elevation from the parking lot to the entrance door is addressed with a concrete ramp and stair system. Railings have deteriorated finishes and surface rust and pitting. Some railings may not be considered compliant with current codes and standards. Where the concrete walk meets the upper landing the walk appears to have sunk, enlarging the joint and creating an abrupt elevation change between the slabs that may not be considered an accessible route. At the lower landing and entrance approach the concrete walk

is in good condition but pulled away from the building creating significant joints between the walk and the building.

2.1.03.3.1 Figure 3: Building Entrance from Parking Lot



The brick veneer appears to be well constructed with appropriately located expansion joints, weeps, through wall flashings, and concave tooled mortar joints. However, the exterior masonry walls have significant water management issues and suffer from neglected maintenance of joints, flashing, and weep holes. Back pitched flashing, lack of redundancy in flashing, and deteriorated or missing sealant are allowing and/or directing water into these exterior wall assemblies. On the north sides of the building that do not receive much direct sunlight these compromised areas display discoloration, streaking, efflorescence, mold, lichen, and other surface growth. At the base of the exterior walls multiple areas were observed with mulch, dirt, and plantings covering or filling vents in the cavity wall, weeps, through-wall flashings, and drainage holes in metal framed glazed assemblies.

2.1.03.3.1 Figure 4: Surface Growth Below Failing Flashing

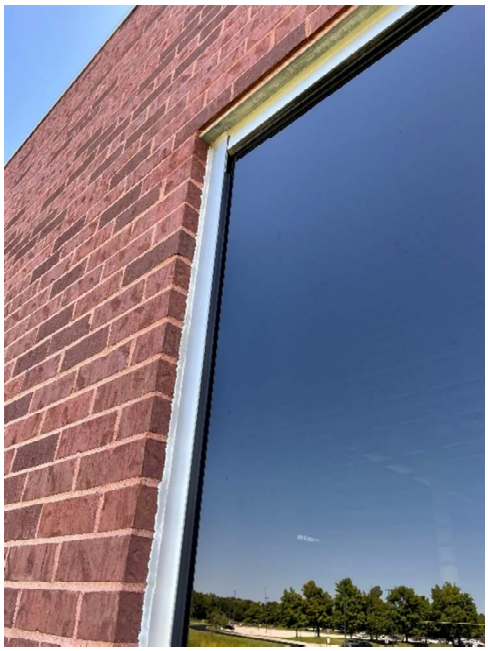
2.1.03.3.1 Figure 5: Surface Growth at Ground Mounted Mechanical Unit

Windows in the original build are in double pane assemblies in good condition, with some oxidation, chalking, and discoloration of the frames. Glazing gaskets are in fair condition, showing normal aging. No indications of seal failure at the insulated glass units was observed. Windows at the office suite are punched openings, with a large opening at the corner office utilizing a receptor head. This receptor head is buckled and failing to maintain an appropriate seal at the window head assembly. Perimeter sealant is aged, alligatored, and pulling away

from adjacent surfaces. Several window sill pans are back pitched directing water at the window assemblies.

The addition to the building is clad in brick and mortar similar to the original build. Exterior walls of the addition do not display evidence of moisture infiltration to the extent the original build does. However, indications of moisture management issues were observed at the windows. Perimeter sealant of varying ages and levels of deterioration are cracked and pulled away from adjacent surfaces at both the window frames and the lintel. No weeps or through wall flashing was observed over opening lintels. Window frames have significant gaps at some joints, window gaskets are missing in some areas, and some sill pans are back pitched. It was noted that steel lintels at these openings appeared galvanized but not painted.

2.1.03.3.1 Figure 6: Window Opening at Building Addition



Primary entrances are storefront doors and glazed vestibules. Storefront framing is in fair condition, displaying some oxidation and chalking normal for its age. Door actuators are provided at the primary entrances. Some walks, landings, and thresholds may not be considered compliant with current accessibility codes and standards. Hollow metal doors and frames at the service areas of the building are in good condition with some visible evidence of deteriorated finishes, pitting and rust. Exterior door hardware has aged finishes with varying degrees of discoloration and pitting surfaces.

2.1.03.3.1 Figure 7: Typical Exterior Doors

Access to the roof of building 220 is by a fixed internal roof ladder and roof scuttle. The roof of the original build is a low-slope, low parapet, roll asphalt system in fair condition but near the end of its serviceable life. The asphalt membrane shows signs of age, loss of protective impregnated granular surface texture, and multiple repairs. The roof membrane turns up and under the metal-flashed backside of the parapet. The metal coping of original build is back pitched and collecting water at many locations, joints are butt joints with multiple instances of failed or missing sealant. Lack of redundancy in flashing and open coping joints correlate to areas of walls surface discoloration and surface growth as observed from ground level.

2.1.03.3.1 Figure 8: Standing Water on Parapet Coping

Both the surface and joint/edge sealers of the roll asphalt are cracked, alligatored, and deteriorated. Internal roof drains on the original build are combination units with overflows. Penetrations and curbs are upturned and overlapped asphalt sheet applications with heavy sealant.

2.1.03.3.1 Figure 9: Typical Roof Penetrations

The lower roof over the entrance canopy has a similar asphalt membrane with a metal edge fascia system and singular internal drain against the higher building wall. This roof appears in poor condition, quite aged and worn, but still serviceable.

Rooftop mechanical units over the original build are screened with a tube steel and metal louver panel system. Steel framing for the equipment screens appears galvanized, unpainted, and is in good condition.

2.1.03.3.1 Figure 10: Mechanical Equipment Screen

The roof of the addition is a low-slope, low parapet, black membrane roof system that meets the original build with an expansion joint. This roof drains to its north and south walls via through-wall scuppers, metal collector heads and leaders which connect to underground drain piping. The coping at the parapet is a metal fascia system that has the roof membrane overlapping the top horizontal surface and adhered to the metal fascia, leaving an exposed edge of the membrane at the roof perimeter.

2.1.03.3.1 Figure 11: Roof at Building Addition

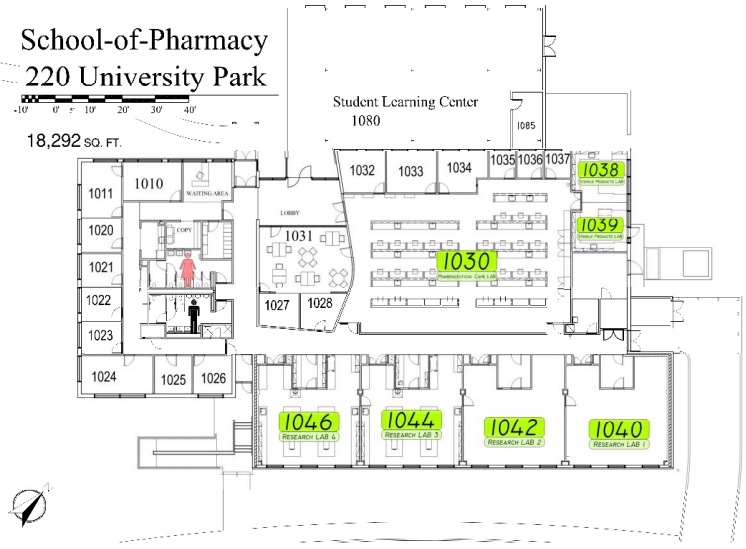
The lower roofs over the equipment and storage rooms at the north end of the building appear to have a white membrane roof with a low parapet and metal fascia system. This roof is in fair condition but near the end of its serviceable life. The membrane is quite dirty and discolored, displaying black and green surface growth indicating water pooling and lack of direct sunlight. The single

internal drain is a 90 degree scupper style against the wall of the building, and was observed to have debris collected at the grate. No overflow drainage system was apparent for this low roof.

2.1.03.3.2 Interiors

There are four primary areas in Building 220; the large pharmaceutical lab with associated support and training rooms, specialized research labs, an administrative office suite, and the student learning center addition.

2.1.03.3.2 Figure 1: Building 200 Floor Plan



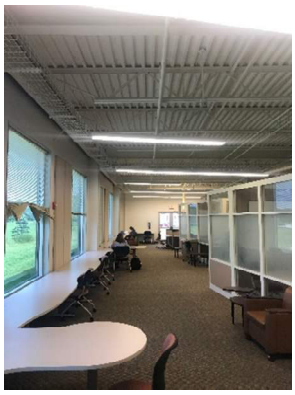
The main entrance is a storefront framed vestibule that opens into a circulation node at the intersection of interior corridors and the lobby. Corridors are open to structure above with painted framing and ductwork, and suspended strip or pendant light fixtures. Ceiling finish over the lobby is a suspended acoustic perforated metal pan and grid assembly in good condition. Lobby and main corridor floors are finished with a large format resilient floor tile that is aged and displaying cracking and bulging in some locations, primarily at the perimeter of the lobby. The lobby shares a glazed hollow metal interior partition with a small study area that serves the pharmacy lab and storefront framed partition with the student learning center addition.

2.1.03.3.2 Figure 2: Interior Lobby and Corridor


The addition is a large open space with painted exposed steel framing and decking, gypsum board finished walls, carpet floor covering, and vinyl wall base. Termination of the gypsum board wall finish at the roof deck is poorly finished at several instances. There is a small equipment and storage room at the north exterior wall opposite the ground mounted mechanical unit. Portions of the original build exterior wall remain such as a brick wall base that transitions to the panel cladding system seen on the east building facade. The space is currently fitted out with modular workstations, small collaboration modules, and study carrels with power poles and overhead cable tray runs servicing the furnishings. Furnishings and carpet floor covering show wear and tear but are in good condition. Some paint finishes at the exposed roof deck and framing were observed to be discolored and peeling with rust at some areas indicating potential water intrusion at the roof.

2.1.03.3.2 Figure 3: Student Learning Center Addition





The large laboratory space is fit out with multiple counters, sinks, and casework. Sinks and plumbing fixtures show heavy wear and use. The lab is open to structure with painted framing and ductwork, suspended tectum acoustic panels and strip light fixtures over the workstations, painted gypsum board finished walls, vinyl wall base, and carpet tile floor covering. Finishes are in good condition overall with the floor covering displaying wear and tear in high traffic areas.

2.1.03.3.2 Figure 4: Large Laboratory Space

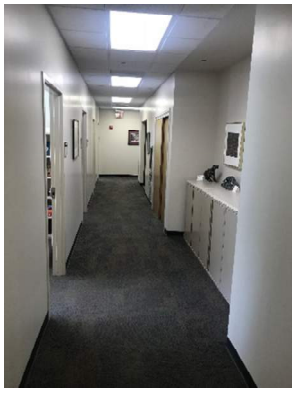
Offices and smaller interview training rooms are accessed off the main lab floor. The carpet tile floor covering of the lab continues into these spaces, walls are a similar mix of gypsum board and either exposed or boxed out columns. Suspended 2x2 acoustic tile ceilings with suspended strip light fixtures are utilized in the office and interview rooms. These rooms have storefront framed windows with metal stools as this was an exterior wall in the original build, now encapsulated by the addition.

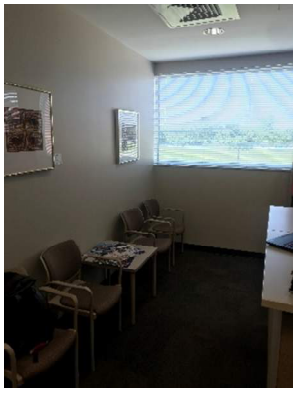
The four research labs are exposed to painted framing and ductwork above, have suspended strip light fixtures, painted gypsum board finishes partitions, and are fitted out with multiple counters, sinks, casework, and specialized equipment. See the Medical Equipment assessment for specifics regarding equipment. Floor finishes are 12x12 vinyl tile in poor condition displaying discoloration, cracking, missing corners, and heavy wear and tear. Casework, countertops, and plumbing fixtures exhibit heavy wear and use. Exterior windows have metal window stools.

2.1.03.3.2 Figure 5: Research Laboratory Spaces

Floor covering at the administrative office suite transitions to carpet tile, and typical office finishes of painted gypsum partitions, vinyl wall base, and suspended 2x2 acoustic tile ceilings with 2x4 lay-in light fixtures. Carpet tile is quite worn in high traffic areas. Exposed painted steel columns occur in some private offices, and exterior windows have the same metal stool as the remainder of the building. A small break room off the corridor has the 12x12 vinyl tile flooring and laminate casework including countertop and sink. The breakroom casework configuration and sink may not be considered accessible by current codes and standards.

2.1.03.3.2 Figure 6: Typical Office Suite Finishes

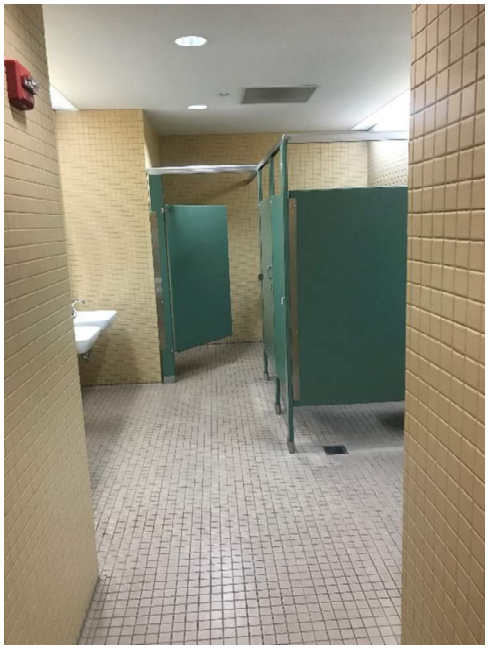


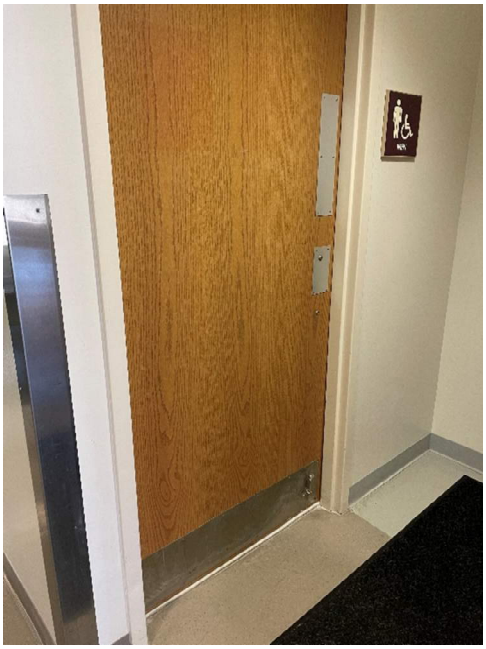


Toilet rooms are finished in small format ceramic tile on both floors and walls. Tile is in fair condition with grout that is discolored unevenly through high traffic and use areas. Toilet partitions and fixtures are in fair condition. Toilet rooms would likely require minor upgrades to comply with current accessibility codes and standards.

Typical interior doors are wood, either flush or with varying lite configurations, set in hollow metal frames. Interior door hardware such as the kickstops on the toilet room doors may not be considered accessible by current codes and standards.

2.1.03.3.2 Figure 7: Toilet Room Door and Finishes



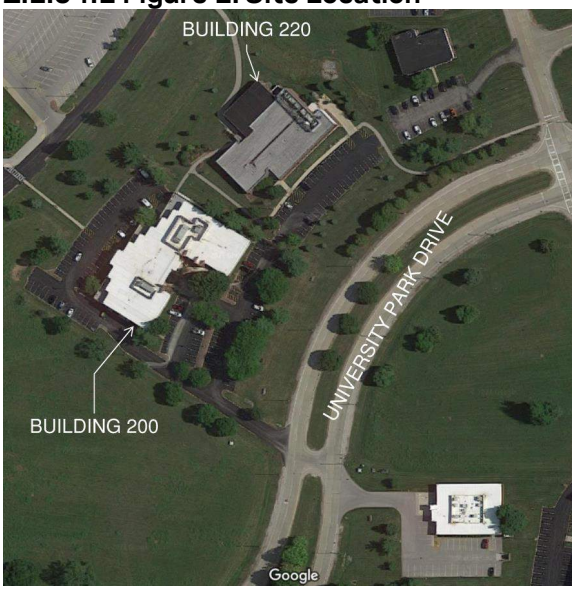


2.1.04 STRUCTURAL

2.1.04.1 Location

This Southern Illinois University Edwardsville (SIUE) Health Sciences Assessment Report considers the structural condition assessment of SIUE Buildings 200 and 220, located on University Drive in Edwardsville, Madison County, Illinois.

2.1.04.1 Figure 1: Site Location



2.1.04.2 Purpose of Assessment

The SIUE Building 200 and 220 condition assessments are being performed as part of a Programming Analysis for HOK Architects. The Program Analysis is considering 3 options for the SIUE Health Sciences Department to renovate and reuse one or both existing buildings as well as new adjacent construction. This report addresses the structural conditions of Building 200 and Building 220 as of September 15, 2021.

2.1.04.3 Description of Structure

2.1.04.3.1 Building 200

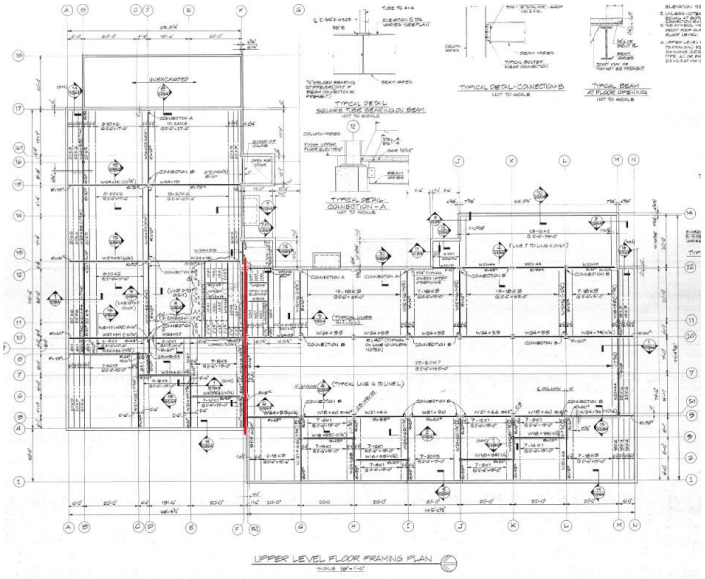
As-built drawings for Building 200 were reviewed for existing construction, overall framing concept, and lateral load path elements. Drawings are dated June 1990 and conditions have been field verified, where possible, from a site visit on September 15, 2021.

Building 200 is an "L" shaped structure consisting of two levels: an Upper Level with terraces and a walk-out Lower Level. Each level is approximately 22,000

square feet. The structure is constructed from structural steel framing and load bearing exterior cast-in-place (CIP) concrete walls.

A 1" expansion joint is provided at an approximate third point along the structure creating two rectangular segments in place of the "L" configuration. See 5.1.03.3.1 Figure 1.

2.1.04.3.1 Figure 1: Building 200 Upper Level Plan (from existing drawings)



2.1.04.3.1.1 Lower Level

The exterior of the lower level is constructed with load bearing, battered, CIP concrete walls with an architectural form-liner finish. Exterior faces of the walls are exposed on the north, west, and south face of the structure. Walls are 18" thick at the base and taper to 8" at the top (with a vertical interior face). An additional top wall segment serves as fall protection along the terrace and consists of a 5" thick CIP wall segment with a smooth finish and a precast cap stone. The top upper and lower portions of the wall are split by the CIP concrete floor at the upper level (see 5.1.03.3.1.1 Figure 1). The partially exposed east CIP concrete wall is typically 1-foot thick.

Walls are supported on continuous 12" thick CIP concrete wall foundations, typically 4-feet wide. Columns are supported on isolated CIP concrete foundations. The Lower Level floor is CIP concrete slab-on-grade.

2.1.04.3.1.1 Figure 1: Building 200 West Face (Looking North)

2.1.04.3.1.2 Upper Level

The Upper Level floor consists of concrete on metal deck (4" total thickness typical and varying to 6" thick at terrace slopes). Metal deck is supported by steel bar joist and wide flange girders with wide flange columns.

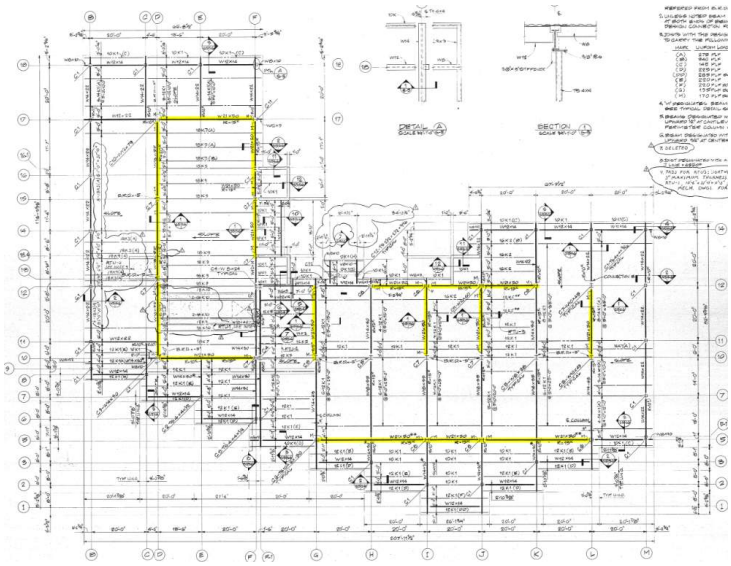
2.1.04.3.1.3 Roof

The roof consists of sloped metal roof deck supported by steel bar joist and wide flange girders and wide flange columns. The roof pads supporting roof top units consists of lightweight concrete. Roof structure supports an approximate 4-foot-tall insulation board façade/soffit on 2.5" cold formed metal framing. This soffit can be seen in 5.1.03.3.1.1 Figure 1.

2.1.04.3.1.4 Lateral System

The lateral system for the structure consists of moment frames in both directions at the upper level and CIP concrete walls at the lower level. For the Upper Level moment frame locations see 5.1.03.3.1.4 Figure 1.

2.1.04.1.4 Figure 1: Building 200 Roof Plan with Highlighted Lateral System (from existing drawings)



2.1.04.3.2 Building 220

As-built and bid drawings for Building 220 were reviewed for existing construction, overall framing concept, and lateral load path elements. Drawings are dated August 2004 and November 2010 for the original building and Student Lounge respectively. Conditions have been field verified, where possible, from a site visit on September 15, 2021.

Building 220 is a generally rectangular single-story structure of approximately 10,500 square feet with a Student Lounge addition of approximately 2,900 square feet. The main structure and Student Lounge are constructed from structural steel framing.

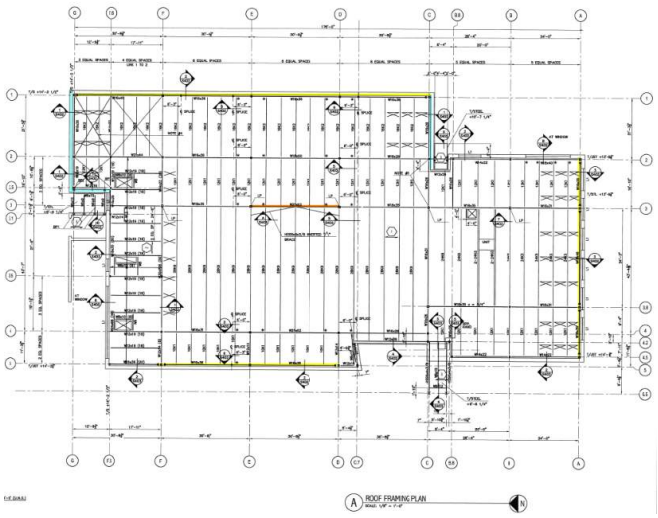
2.1.04.3.2.1 Original 220

The roof level of the original structure consists of metal roof deck supported by steel bar joist and wide flange girders and HSS columns. Concrete masonry unit (CMU) walls are present but do not support gravity load and are part of the lateral system. Columns are supported on isolated CIP concrete foundations. The CMU walls and exterior façade are supported on CIP concrete stem walls and continuous 12″ thick CIP concrete wall foundations, typically 2-feet wide. The floor is CIP concrete slab-on-grade.

2.1.04.3.2.2 Original 220 Lateral System

The lateral system of the original 220 building appears to be a combination of CMU walls, moment frames, and a braced frame. The north-south lateral resistance is provided by two lines of moment frames on the west and east faces of the structure and a single steel HSS braced frame (inverted "V") centered in the floor plan. The west-east resistance is provided by 8" CMU walls located near the north face and third point of floor plan in addition to a moment frame along the south face.

2.1.04.3.2.2 Figure 1: Building 220 Roof Plan with Highlighted Lateral System (from existing drawings)



2.1.04.3.2.3 Student Lounge Addition

The Student Lounge addition structure consists of metal roof deck supported by steel bar joist and wide flange girders and columns. Columns are supported on isolated CIP concrete foundations. The exterior façade is typically supported on continuous 32" CIP concrete grade beams, typically 2-feet wide. The floor is CIP concrete slab-on-grade.

A 2" expansion joint separates the addition structure from the original Building 220 structure.

2.1.04.3.2.4 Student Lounge Addition Lateral System

The lateral system of the Student Lounge addition consists of moment frames in each direction. A single moment frame is located on the perimeter of each side of the structure in both east-west and north-south orientations.

2.1.04.4 Observations

Buildings 200 and 220 were visually observed on September 15, 2021, by parties from David Mason and Associates (DMA), SIUE, HOK, and IMEG. The observations were conducted on the accessible portions of the structure (inside and outside of buildings). The buildings are currently occupied and finished so few interior observations have been made.

The results of the observations are as follows:

2.1.04.4.1 Building 200

- Cracking at exterior battered concrete walls:
    - Corners of windows and doors (typical):
        - See 5.1.03.4.1 Figure 1: Building 200 Exterior Concrete Wall Cracking
        - See 5.1.03.4.1 Figure 2: Building 200 Exterior Concrete Wall Cracking
    - Along the top side of the wall along the form-liner finish:
        - See 5.1.03.4.1 Figure 3: Building 200 Exterior Wall Face Cracking (Looking Down)
    - Along the fall protection wall at typical intervals:
        - See 5.1.03.4.1 Figure 4: Building 200 Exterior Fall Protection Wall Cracking
- Spalling at exterior battered concrete walls:
    - At corners subject to potential chloride infiltration:
        - See 5.1.03.4.1 Figure 5: Building 200 Exterior Wall Cracking (North-East Face)
        - See 5.1.03.4.1 Figure 6: Building 200 Exterior Wall Spalling (North-East Face)
    - At west wall face (approximately 2 square feet):
        - See 5.1.03.4.1 Figure 7: Building 200 Exterior Wall Spalling (West Face)
- Cracking and spalling at the south dock/transformer/trash area:
    - At cast-in-place beam supporting stairs above (for terrace access) subject to chloride infiltration:
        - See 5.1.03.4.1 Figure 8: Building 200 Dock/Trash Cracking and Spalling
- Damaged membrane surface at the terrace:

- At cast-in-place fall protection, damaged membrane surface causing potential water infiltration to concrete. Damage was typically limited to vertical surfaces:
  - See 5.1.03.4.1 Figure 9: Building 200 Typical Membrane Damage
  - See 5.1.03.4.1 Figure 10: Building 200 Typical Membrane Damage

2.1.04.4.1 Figure 1: Building 200 Exterior Concrete Wall Cracking

2.1.04.4.1 Figure 2: Building 200 Exterior Concrete Wall Cracking

2.1.04.4.1 Figure 3: Building 200 Exterior Wall Face Cracking (Looking Down)

2.1.04.4.1 Figure 4: Building 200 Exterior Fall Protection Wall Cracking

2.1.04.4.1 Figure 5: Building 200 Exterior Wall Cracking (North-East Face)

2.1.04.4.1 Figure 6: Building 200 Exterior Wall Spalling (North-East Face)

2.1.04.4.1 Figure 7: Building 200 Exterior Wall Spalling (West Face)

2.1.04.4.1 Figure 8: Building 200 Dock/Trash Cracking and Spalling

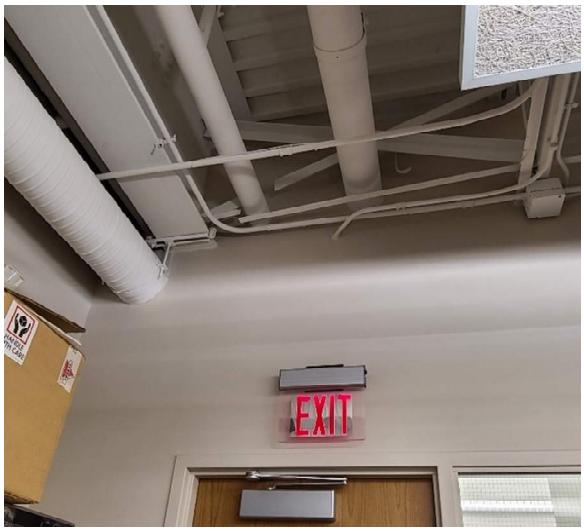
2.1.04.4.1 Figure 9: Building 200 Typical Membrane Damage

2.1.04.4.1 Figure 10: Building 200 Typical Membrane Damage

2.1.04.4.2 Building 220

- Joist bridging was observed to be cut in place:
    - In the north end of the Pharmacy Care Lab:
        - See 5.1.03.4.2 Figure 1: Building 220 Joist Bridging Cut
- Non-structural paint flaking was observed:
    - In the Student Lounge at the middle column on both the north and south sides:
        - See 5.1.03.4.2 Figure 2: Building 220 Student Lounge Paint Flaking (Looking North)
        - See 5.1.03.4.2 Figure 3: Building 220 Student Lounge Paint Flaking (Looking South)

2.1.04.4.2 Figure 1: Building 220 Joist Bridging Cut



2.1.04.4.2 Figure 2: Building 220 Student Lounge Paint Flaking (Looking North)

2.1.04.4.2 Figure 3: Building 220 Student Lounge Paint Flaking (Looking South)

2.1.04.5 Discussion

2.1.04.5.1 Building 200 Recommended Repairs

- Approximately 3000 linear feet of surface cracking on all exterior faces of CIP concrete walls. Concrete spalling was observed in the north-east corner of the structure at the north side stair access to terrace.

    - DMA recommends applying a sealer to minimize water infiltration and future freeze-thaw damage.
    - DMA recommends repairing spalled concrete surface.
- Approximately 2 square feet of spalled concrete surface on the west face of CIP concrete wall.
    - DMA recommends patching concrete at this location. This is a non-structural issue. Restore surrounding form-liner finish.
- Approximately 15 linear feet of cracking and spalled concrete at the beam supporting the south side stair access to terrace.
    - DMA recommends repairing spalled concrete and cracking.
- Membrane wearing surface damage for vertical faces in both terraces.
    - DMA recommends repairing or replacing vertical surfaces of the fall protection barrier membrane.

2.1.04.5.2 Building 200 Seismic Recommendations

Existing drawings indicate that Building 200 meets the 1987 BOCA seismic design provisions using the following criteria:

- Zone 2
- V = 0.047 W

A direct comparison of the 1987 BOCA to the IBC in effect by the Authority Having Jurisdiction (AHJ) has not been performed for this Assessment Report. DMA's recommendation to limit the requirements for a seismic re-analysis or upgrade to include the following:

- Limiting changes to interior remodel ONLY.
- NO CHANGE to the existing Building Use Category.
- NO CHANGE to any lateral resisting elements (including but not limited to new openings in concrete walls, new openings in floor or roof, and modifications to moment frames).
- NO CHANGE that adds weight to the structure (including but not limited to new RTU's, vertical floor additions, or horizontal additions physically tied to the existing structure).

Provided that the above limitations are maintained, DMA does not anticipate a seismic upgrade at this time.

2.1.04.5.3 Building 220 Recommended Repairs

- One joist bridging bay was observed to be cut in place to accommodate MEP services.
    - DMA recommends verifying that no other bridging has been cut. Provided that no other bridging is damaged, no repair is required. If additional bridging is cut, replace all damaged bridging.

- Approximately 60 square feet of flaking paint in the Student Lounge.
    - DMA recommends cleaning and removing flaking paint. Verify no rusting has occurred to structural steel and repaint as required.

2.1.04.5.4 Building 220 Seismic Recommendations

Existing drawings indicate that the original Building 220 meets 1999 BOCA seismic design provisions using the following criteria:

- Soil Site Class 53
- Aa = 0.12G
- AV = 0.13G
- Seismic Hazard Exposure Group I
- Seismic Performance Category C

The Student Lounge addition meets 2006 IBC seismic design provisions using the following criteria:

- Seismic Importance Factor, I = 1.0
- Ss = 0.533
- S1 = 0.162
- Site Class D
- Sds = 0.50
- Sd1 = 0.23
- Seismic Design Category D
- Intermediate Steel Moment Frames
- V = 16k
- R = 4.5
- Simplified Analysis

A direct comparison of the 1999 BOCA or 2006 IBC to the IBC in effect by the AHJ has not been performed for this Assessment Report. DMA's recommendation to limit the requirements for a seismic re-analysis or upgrade to include the following:

- Limiting changes to interior remodel ONLY.
- NO CHANGE to the existing Building Use Category.
- NO CHANGE to any lateral resisting element (including but not limited to new openings in CMU walls, new openings in roof, and modifications to moment or braced frames).
- NO CHANGE that adds weight to the structure (including but not limited to new RTU's, vertical floor additions, or horizontal additions physically tied to the existing structure).

Provided that the above limitations are maintained, DMA does not anticipate a seismic upgrade at this time.

2.1.04.6 Geotechnical Information

Geotechnical information for the proposed location of the new building along University Park Drive in Edwardsville, IL is provided from the Preliminary Geotechnical Engineering Report by Terracon Consultants, Inc. dated September 15, 2021.

The report recommends a deep foundation system to support new building structures. Deep foundation recommendations have been provided for Auger Cast-in-Place piles and Drilled Piles.

High plastic soils have been identified on the site and are prone to swelling with increased water content. Soils of this nature are likely to affect slab-on-grade. Recommendations have been made to remove high plastic soils and replace with approved Low Plasticity materials.

Additionally, undocumented fill has been identified. Recommendations have been made to remove fill at new construction and replace with approved Low Plasticity materials.

Positive drainage away from the building is also recommended.

Seismic considerations provided in the report indicate a Seismic Site Class of E. A shear wave velocity test is to be completed to determine if a lesser Seismic Site Class may be achieved.

2.1.05 PLUMBING

2.1.05.1 Building 200

The existing domestic water service for Building 200 includes two separate service lines that enter the building at the southeast wall near Room 290 and the south wall near Storage 220-29. Neither service has backflow protection devices, and it was noted by the maintenance staff that the building originally had three domestic water service lines, but the third line was abandoned at some point. There are the remnants of an exterior water connection for irrigation that has been capped and the backflow removed. Domestic water meters are located in pits at the exterior of the building in the adjacent landscape areas. Typically, the plumbing code requires backflow prevention at the incoming domestic service, therefore the addition of backflow at this building will need to be considered. Domestic hot water at the restrooms and kitchen/break areas are provided via local electric tank type water heaters, hot water recirculation is not present. The water heaters were manufactured in 1992 and replacement should be considered.

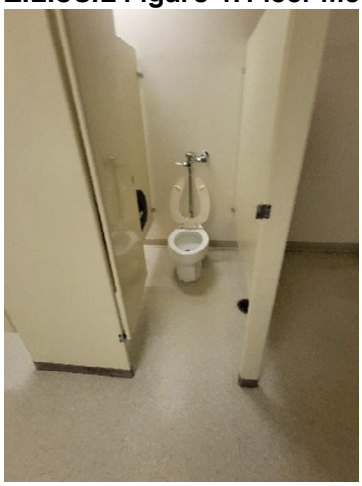
2.1.05.1 Figure 1: Electric Water Heater at Janitor

2.1.05.1 Figure 2: Abandoned Irrigation Water Connection

The roof drains via primary roof drains, there is no parapet at the roof level and no overflow drains are installed. Restroom fixtures include wall hung lavatories with manual faucets, wall hung urials with manual flush valves, and floor mounted water closets with manual flush valves. The electric water coolers are equipped with integral senor operated bottle fillers. The restroom fixtures are in good working condition.

2.1.05.1 Figure 3: Bi-Level Water Cooler with Filler

2.1.05.1 Figure 4: Floor Mounted Water Closet

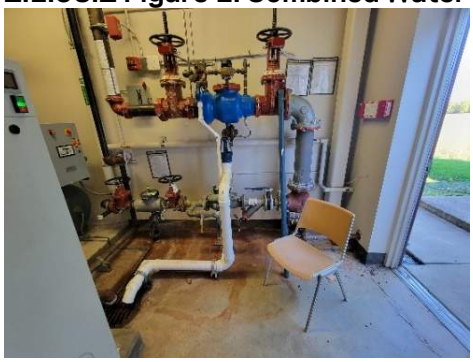


There is no natural gas service to this building and this building does not have fire protection water service.

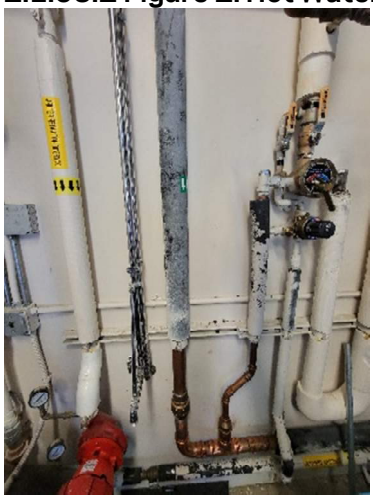
2.1.05.2 Building 220

The existing combined 6″ domestic and fire protection water service enters the building at a mechanical room near the north corner of the building. The service separates inside the building to a 3″ domestic line that is routed through a meter and then a double check backflow preventer. The 6″ fire protection line is routed through a double check backflow preventer. The static pressure gauge at the fire riser had a 75 psi reading. Domestic hot water for the building is produce by a PVI natural gas fired water heater located in the mechanical room. The water heater has 800 MBH gas input and 300 gallon storage capacity. The domestic hot water system utilizes a Leonard master mixing valve to provide tempered water to the building that is recirculated back to the water heater.

2.1.05.2 Figure 1: Combined Water Services



2.1.05.2 Figure 2: Hot Water Master Mixing Valve

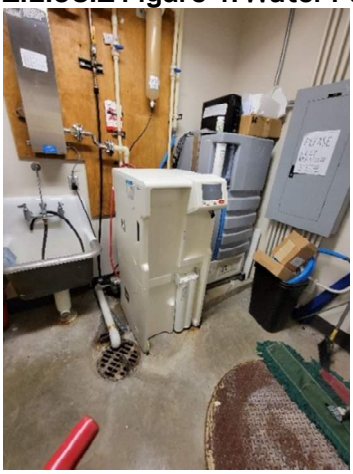


Also located in the mechanical room are a vacuum pump and air compressor. The vacuum pump is manufactured by PreVac, a rotary vacuum pump with a pressure gauge reading of -27in HG. The air compressor is manufactured by PowerAire which utilized an oil-less scroll. Adjacent to the compressor is a tank and a Donaldson Ultrafilter refrigerated air dryer. Both the compressor and vacuum pump appear to be in good working condition.

2.1.05.2 Figure 3: Vacuum Pump

There is an ultra-violet water disinfection unit that provides water to a Millipore Elix 80 Electrodeionization (EDI) water purification unit and Millipore SDS Storage and Distribution System for distribution to the labs located in an internal mechanical room near Pharmaceutical Car Lab 1030. Also located in this room is a in floor acid waste tank. According to the maintenance staff there have been several issues with the Millipore Elix 90 EDI running properly.

2.1.05.2 Figure 4: Water Purification System and Acid Tank



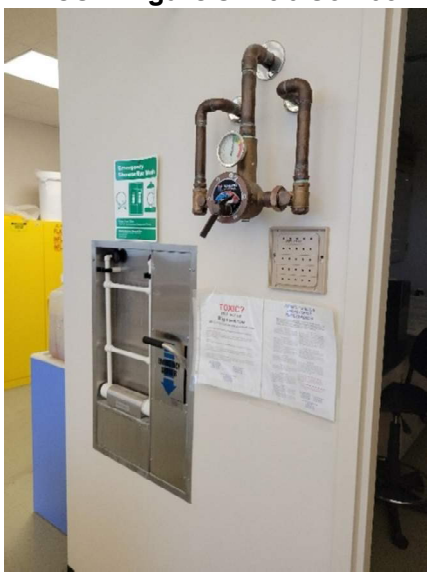
The main roof drains via primary roof drains routed to underground storm, and overflow drains that drain through downspouts are installed. The roof over the Student Learning Center drains via scuppers and downspouts routed to the underground storm.

This building has natural gas service, The gas train including the main regulator and meter is located in the equipment enclosure just outside the mechanical room near the north corner of the building. The pad mounted generator is served downstream of the gas train and the gas enters the building to serve the gas fired water heater. There is also a pad mounted rooftop unit that has natural gas service.

Restroom fixtures include wall hung lavatories with manual faucets, wall hung urials with manual flush valves and wall mounted water closets with manual flush valves. The electric water coolers are equipped with integral senor operated bottle fillers. The plumbing fixtures appear to be in good working order.

Each research lab has two sinks at each end of the room served with domestic and pure water. Each research lab also has one recessed wall mounted combination emergency shower/eyewash station with a wall mounted Leonard mixing valve at each station. The lab emergency fixtures and sinks appear to be in good working order.

2.1.05.2 Figure 5 : Lab Combo Emergency Shower/Eyewash



2.1.05.2 Figure 6: Typical Lab Sink

2.1.06 MECHANICAL

2.1.06.1 Building 200

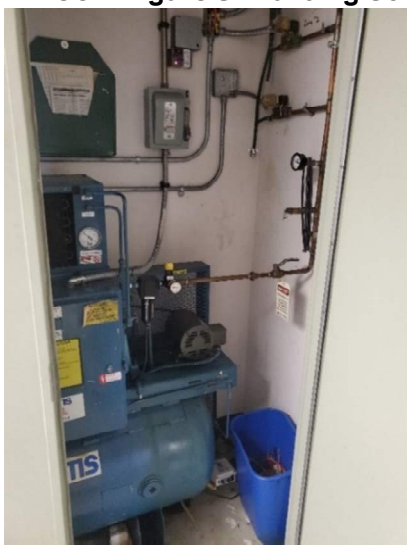
The mechanical heating and cooling system of Building 200 consists of three rooftop air handling units (RTU) and baseboard electric heaters. The DX cooling, electric heat RTUs provide ventilation and space cooling and are connected to a mixture of pneumatic and electronic building automation systems. It is assumed that the newer RTUs are served by electronic controls and the older RTU-1 is remaining on the pneumatic control system. The baseboard radiators provide space heating and appear to have non-thermostatic local control only.

2.1.06.1 Figure 1: RTU-1

2.1.06.1 Figure 2: RTU-3

RTU-1 is an older unit with limited life remaining and appears to serve the north side of the building. RTU-2 appears to have been replaced in the last five years but is a smaller unit that likely serves only a small portion of the building. RTU-3 was installed in 2020, however according to discussions with facilities it has temperature control issues due to being purchased without adequate reheat.
The compressor serving the pneumatic controls system is located in the small mechanical room 1109 on the lower level. Any renovation of the building will have to include a full controls upgrade that will eliminate the need for this compressor.
The electronic thermostats observed in the building were Johnson Controls.

2.1.06.1 Figure 3: Building Controls Compressor



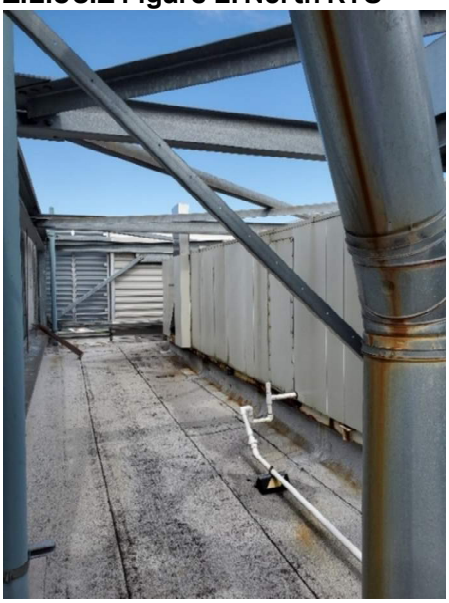
2.1.06.1 Figure 4: Digital Controls

The single hydraulic elevator in the building appears to be original and is likely near the end of life.

2.1.06.2 Building 220

The mechanical heating and cooling system of Building 220 consists of two rooftop air handling units and one grade mounted packaged air handling unit (AHU). The DX cooling, gas heat units provide ventilation and space cooling and are connected to a central electronic Johnson Controls building automation system. The RTUs serve the original building consisting of classrooms, labs, and offices. The grade mounted AHU serves the Student Learning Center addition. The zone controls for the building are variable air volume terminal boxes with electric reheat coils.

2.1.06.2 Figure 1: North RTU



2.1.06.2 Figure 2: Grade Mounted AHU

The two original RTUs are approximately 16 years old and will be nearing the end of their usable life around the completion of the new Health Sciences building. Additionally, one of the units was down for repair while the team was on site for the building investigation. The grade mounted AHU is approximately 13 years old and likely has another five to seven years before needing to be replaced. This unit is smaller, and the grade mounted location allows for easy replacement.

There are five large teaching labs and a pair of sterile rooms in the building. Research labs one through four contain multiple fume hoods. The hoods are connected to a central fume exhaust ductwork system that is served by a high plume lab exhaust fan located on the roof adjacent to the RTUs. It appears the exhaust fan may be original to the building and thus reaching end of useful life. While the team was not able to observe the sterile room systems, it is assumed that these rooms required special filtration, air exchanges, and pressure relationships that the HVAC system must maintain.

2.1.06.2 Figure 3: High Plume Lab Exhaust Fan

2.1.06.2 Figure 4: Typical Lab Fume Hoods

2.1.07 ELECTRICAL

2.1.07.1 Electrical Service Options

The existing campus is currently served from an existing Ameren substation utilizing 12.47kV secondary distribution in a loop configuration. The 12.47kV feeders terminate in two existing 15kV switchboards located at the existing Ameren substation. 15kV feeders originating from these substations feed pad mount switches located on the campus and then downstream transformers located at each building.

2.1.07.1 Figure 1: Ameren Service Yard

2.1.07.1 Figure 2: Customer 15kV Switchgear

2.1.07.1.1 Option 1 - Serve Facility from Existing Campus Loop

Option 1 is to serve the facility from the existing 12.47kV campus loop. This assumes the existing 12.47kV campus distribution system has capacity to pick up the additional load. The design team is reviewing this option with SIUE and Ameren Illinois. One benefit with this is the facility will be on the same distribution system with the rest of the existing campus. (Note: Any anticipated renovations to the 200 and 220 buildings will maintain the existing Ameren services even if the new building is fed from the campus loop.)

2.1.07.1.2 Option 2 - Serve Facility from New Utility Transformer

Option 2 is to serve the facility from a new Ameren utility transformer. This will require additional coordination with Ameren Illinois. This option follows the same approach as the existing 200 and 220 buildings. One downside of this is the facility will not be on the existing campus distribution loop and will have a separate Ameren service.

2.1.07.2 Building 200

This facility is served by a 500kVA, 12.47kV grounded Y primary, 480/277 volt secondary, three-phase, four-wire pad mount transformer located exterior to the building. This transformer serves an 800 amp, 480/277 volt, three-phase, four-wire service rated panel located in the main electrical room of the building. The service panel is a Siemens ITE panelboard (catalog #B4ML4800SBM) and has a short circuit rating of 18,000 amps.

2.1.07.2 Figure 1: Service Transformer

2.1.07.2 Figure 2: Service Panel

The above service panel feeds downstream 480 volt panelboards which serve lighting and mechanical equipment. These 480 volt panelboards also serve downstream transformers which feed 120/208 volt, three-phase, four-wire branch panels for receptacle load and other equipment/controls that require 120 volt or 208 volt power. The transformers range in size from 75 kVA to 112.5 kVA. All electrical distribution equipment is Siemens.

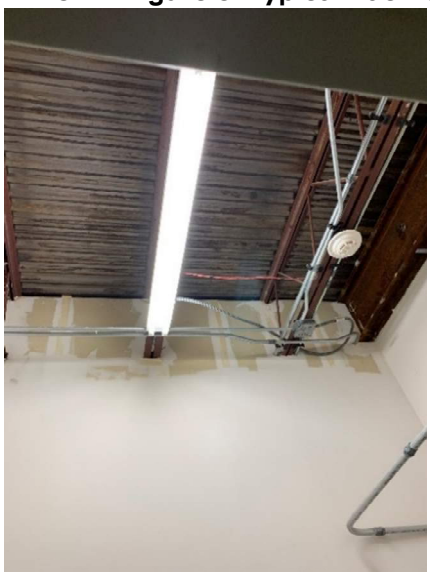
2.1.07.2 Figure 3: Electric Room

2.1.07.2 Figure 4: Branch Distribution Transformer

The existing lighting is a combination of 2'x4', 2'x2' fluorescent T8 lensed troffers and compact fluorescent downlights in the offices, corridors, and other front of house areas. Fluorescent strip fixtures are utilized in mechanical and electrical equipment rooms, IT closets, and other back of house areas.

2.1.07.2 Figure 5: Typical Corridor Lighting

2.1.07.2 Figure 6: Typical Back-of-House Lighting



The existing fire alarm system is Siemens Cerberus.

2.1.07.2 Figure 7: Fire Alarm Panel

2.1.07.3 Building 220

This facility is served by a 500 kVA, 12.47kV grounded Y primary, 480/277 volt secondary, three-phase, four-wire pad mount transformer located exterior to the building. This transformer serves an 800 amp, 480/277 volt, three-phase, four-wire service rated panel located in the main electrical room of the building. The service panel is a GE Spectra series panelboard (Order #178PP84576) and has a short circuit rating of 100,000 amps.

2.1.07.3 Figure 1: Service Transformer

2.1.07.3 Figure 2: Service Panel

There is a 20kW standby generator located exterior to the building. This is a Cummins PowerCommand 1300 Series natural gas, pad mounted generator connected to a Cummins PowerCommand transfer switch located in the main electrical room.

2.1.07.3 Figure 3: Backup Generator

2.1.07.3 Figure 4: Transfer Switch

The service panel feeds downstream 480 volt panelboards which serve lighting and mechanical equipment. These 480 volt panelboards also serve downstream transformers which feed 120/208 volt, three-phase, four-wire branch panels for receptacle load and other equipment/controls that require 120 volt or 208 volt power. All electrical distribution equipment is GE.

2.1.07.3 Figure 5: Branch Distribution Panels

The existing lighting is a combination of linear indirect in the classroom, 2'x4', 2'x2' fluorescent T8 lensed troffers and compact fluorescent downlights in the offices, corridors, and other front of house areas. Industrial fluorescent fixtures are utilized in mechanical and electrical equipment rooms, IT closets and other back of house areas.

2.1.07.3 Figure 6: Lab Lighting

2.1.07.3 Figure 7: Typical back-of-house lighting

The existing fire alarm system is Siemens Cerberus.

2.1.07.3 Figure 8: Fire Alarm Panel

2.1.08 FIRE PROTECTION

2.1.08.1 Building 200

This building does not have a fire sprinkler system.

2.1.0.8.1. Building 220

A 6" combined fire and water services line splits off to a 6" fire water double check backflow preventer in the mechanical room. There is a fire department connection located adjacent to the main entrance on the south side of the building. Valves and zones on the system are monitored by the building fire alarm system. All fire protection equipment and piping appeared to be in good condition.

2.1.08.1.1 Figure 1: Building Fire Department Connection

2.1.09 MEDICAL EQUIPMENT

2.1.09.1 Medical Equipment Inventory Narrative

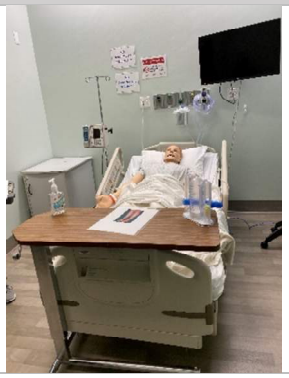
Southern Illinois University is planning to construct a new Health Sciences Building which will connect to two existing buildings that will also be renovated. The new facility will house the Schools of Pharmacy, Nursing and related health sciences programs, with the following spaces included to support them.

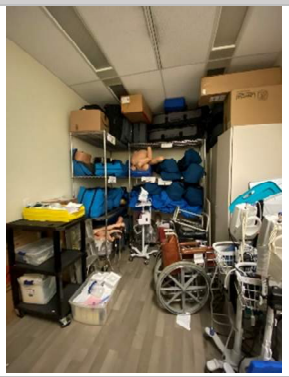
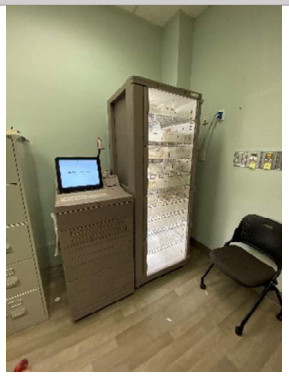
SMW was on site from October 12th through October 13th to conduct a medical equipment survey at Southern Illinois University in Edwardsville. Facilities toured were the School of Nursing and the School of Pharmacy. Those in attendance were SMW along with school representatives Mark Luer, Dean/Interim Dean; John Renke, PM Faculties Management; Amy E. Reed, PhD, RN; Mikael Crider, Pharmaceutical Sciences Department Chair.

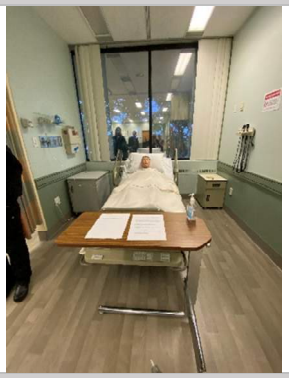
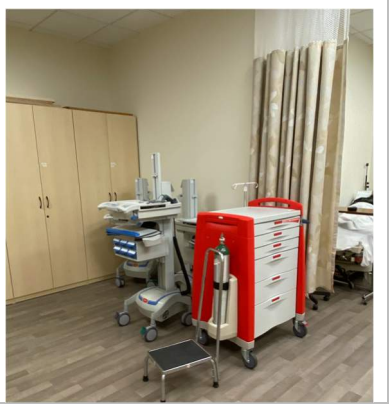
2.1.09.1.1 School of Nursing

The goal of the SIUE School of Nursing graduate program is to prepare expert nurses for leadership in professional nursing practice and patient-centered health care delivery. The school is a combination of Simulation Labs and Skilled Training.

1	Exam Room 1 Rm #2204	
	• Exam Table • Mobile light • Scale • Diagnostic Set, wall mounted • Medication dispenser	

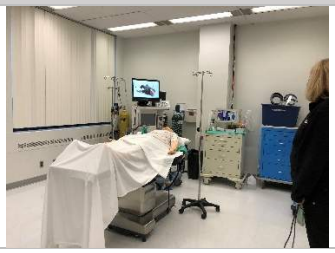
2	**Exam Room 2 Rm#2203**	
	• Exam Table • Mobile light • Bassinet • Scale • Mobile light • Mannequin, Baby • Diagnostic Set, wall mounted	
3	**Exam Room 3 Rm#2002**	
	• Recliner • Incubator • Mannequin, adult • Mannequin, baby • Incubator • Wheelchair • Shelving • Crash cart • Defibrillator • Infusion pumps • oPCS pumps • Supply cart	
4	**Med/Surgical Patient Room, Hi-Fidelity, #2211**	
	• Patient Bed • Bedside Table • Infusion Pump on stand • Glove Box • Supply Cart • Mayo Stand • Sharps Dispenser • Digital Floor Scale	

5	**Storage, #2205**	
	• Wire Shelving • Crutch Rack on Walk • Wheelchairs • Vital Signs Monitor	
6	**ER Room, #2206**	
	• Mobile headwall • Stretcher • Mannequin • Diagnostic set, wall mounted • Crash Cart • Supply Cart	
7	**Medication Room, #2207**	
	• Wire cart • Meds dispenser, Main (Host) • Meds dispenser, Auxiliary Supply • Bladder Scanner • Metal Cabinet for supplies	

8	**Patient Assessment, (3) Bay- Mid Fidelity**	
	• Bedside cabinet • Step-on waste can • Overbed table • Sharps Dispenser • Glove Box, Wall Mounted • Mannequin, Male • Diagnostic Set, Wall Mounted	
9	**Annex, #2300**	
	• Stretcher • Infusion pump with IV stand • Sharps Dispenser w/ Single Glove Box • Mannequin, Geriatric • Crash Cart • Medication Carts	 

10	**Birthing Exam Room, #2209- High Fidelity Room**	
	• Mannequin, Mom • Mannequin, baby • Incubator • Infusion pump • Fetal Monitor • SHARPS, wall mounted • Bedside cabinet • Mobile Supply Cart • Stretcher • Mayo stand	 
11	**Corridor**	
	• Metal Double Door Supply Cabinets	

12	**Skills, #3200- 5 Bays**	
	• Meds dispenser • Supply Carts • Stretchers • SHARPS • Mannequin	
13	**Anesthesia Storage Room, #3327**	
	• Wire Carts • Wire Shelving • Supply Cart • Bladder Scanner • Metal Storage Cabinets	
14	**Apartment**	
	• Couch • Chairs • Television • Bedside Cabinet • Sharps Dispenser • Glove Box • Hand Sanitizer	 

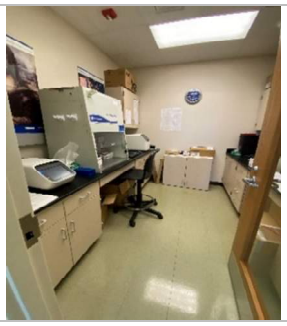
15	**Anesthesia, #3337**	
	• Table, Morgue, Virtual Dissection	
16	**Operating Room**	
	• Anesthesia Machines, quantity 2 • Surgical Table • Supply Carts, quantity 2 • Defibrillator	

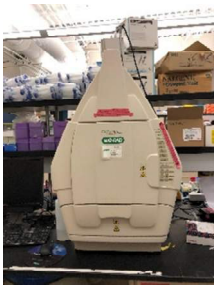
2.1.09.1.2 School of Pharmacy

The goal of the SIUE School of Pharmacy graduate program is to prepare expert Pharmacists for leadership in professional pharmacy practice and patient-centered health care delivery.

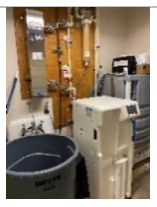
Pharmacy consists of the following Labs; Pharmacy Care, Molecular Lab, Genomics Lab, Biotech Labs and multiple Chemistry Labs.

1	**Pharmacy Practice Lab #1030**	
	• Lab Balances • Purifier • Hood-countertop • Scale • Capsule Machine • Biosafety Cabinet, Glove Box	

		
2	**PC Clean Lab #1047**	
	• PCR Workstation • PCR System • Scale • Plate Centrifuge • Electrophoresis Station • Thermocycler • Spectrometer • Lab Balance	
3	**Medical Chemistry Lab 1 #1040 (Nieto and Schober)**	
	• Ice Maker • Refrigerator / Freezer • Lab Balance • Bath, refrigerated • Liquid Scintillation Counter • Gamma Counter • Water Purification System • Hotplate • Electrophoresis Power Supply • Fluorospectrometer • Dry Bath • Vortex Mixer • Centrifuge • Rotary Evaporator System • Flammable Cabinet • Flow Cytometer • Lab Oven • Ultrasonic Cleaner • Recirculating chiller • Conductivity unit • Hydrogenerator • Meter	 

4	**Medical Chemistry Lab 2 #1042 (Crider and Kolling)**	
	• Conductivity Meter • Meter • Rotator • Mixer • Lab Scale • Lab Balance • Centrifuge • Microscope • Motor • Vacuum pump • Flammable Cabinet, undercounter • Hood • Flammable Cabinet, single door	 
5	**Molecular Lab #1044 (Kwon and Witt)**	
	• Lab Balance • The Clean Spot workstation • Digital Camera • Centrifuge • Centrifuge, floor model • Crosslinker (hooked up to a temperature controller) • Vibratone • Dismembrator • Gel Dryer • Imaging system, Bio-Rad – floor model • Power supply for Bio-Rad • Oven, hybridization • Power supply for 265 • Reader, Microplate • Shaker • Spectrophotometer • Temperature controller: TCAT-2 • Vacufuge • Cryosystem	   

6	**Genomics Lab #1046 (McPherson and Worthington)**	
	• Liquid Chromatography System • Centrifuge • Micro-centrifuge • Vacuum Concentrator • Experion System • Flask scrubber • Hood – countertop • Microscope • Fluorospectrometer • Freeze Dry System • Vacuum Pump • Freezer, Ultra Low, Full height • Incubator, Shaker • Pump • Rotator • Spectrophotometer • Thermocycler • Thermomixer • Water Purification System includes tank • Ultracentrifuge • Refrigerator / Freezer • Freezer, full height • Vortex Mixer • Mixer • Concentrator Centrifuge • Lab Balance • Ultrasonic Homogenizer • Microwave • Incubator, Dry Bath • Lab Scale • Hotplate • Ultrasonic Cleaner • Rotating Mixer • Flammable Cabinet, single door • Flammable Cabinet, double door, half height • Lab Oven • Laboratory Refrigerator, 3 door • Shaker • Incubator • Melting Point System • Analyzer, thermogravimetric • Vacuum Oven	    

	• Calorimeter • Dryfast Pump • Flammable Cabinet, countertop • Rotary Evaporator System • Freezer, countertop • Hood, on legs • Nitrogen Generator • Quaternary arc system • Vacuum gage • Flammable Cabinet, undercounter • Lab Water Bath • Chromatoga	  
7	**Utility Room (Vivarium) #1051**	
	• Chest Freezer • Cages, mice	 
8	**Maintenance Closet #1052**	
	• Electro Deionization Water Purification system	

9	**NMR Lab #1038**	
	• Magnetic Spectrometer	  

2.1.09.1.3 School of Pharmacy – Pharmacy Services Building Biotech Lab, ill Neumann

The Lab within this building is dedicated primarily to chemistry.

1	**Biotech Lab**	
	• Hood, labeled Hood #2, mounted to cabinet • Immersion Cooler • Vacuum Pump • Temperature Controller, wall mounted • Stirrer • Stirrer hotplate • Nitrogen Generator • Rotary Evaporator system • Recirculating Chiller • Vacuum pump • Refrigerator / Freezer • Flammable Cabinet – single door – labeled "FC-I"	  

	• Flammable Cabinet – double door, quantity 2 – labeled "FC-2" and "FC-3" • Lab Oven • Refrigerator / Freezer - labeled "REF-1", countertop mounted • Mass Detector • Separation Module system • Balance • Scale • Ultrasonic Cleaner • Vortex Mixer • Heater • Rotary Evaporator system • Heating Bath • Rotavapor • Re-circulation chiller • Interface • Scale Assembly on floor • Recirculating Chiller • Fraction Chiller • Rotary Evaporator system • VAC Automatice • Recirculating Chiller • Hood – labeled "Hood #1" (with water connection)	    

Summary

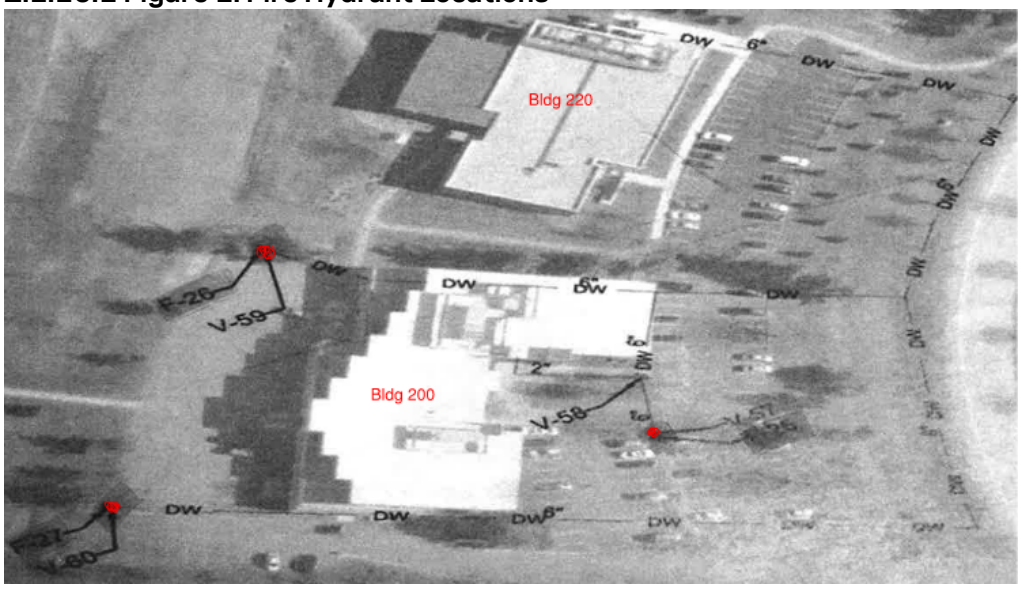
The above summary of existing inventory is a high-level overview of categories of equipment that were found in each space that will be relocating to the new Health Sciences Center. An expanded detailed listing of the inventory will be provided and incorporated into the schematic design documents. A more in-depth discussion should be conducted with SIUE clinical engineering, project management and the consultant team to determine a final disposition of the medical equipment surveyed. This will ultimately benefit SIUE by establishing a final list of new and existing equipment for the newly constructed spaces.

2.1.10 WATERFLOW TESTING RESULTS

2.1.10.1 Testing Locations

The bridging document team acquired the services of Ahern to complete flow and pressure testing on the three hydrants closest to the proposed project site. The measurements were taken at hydrants F-25, F-26, and F-27 that are served off a 6" water main that runs along the north side of University Park Drive.

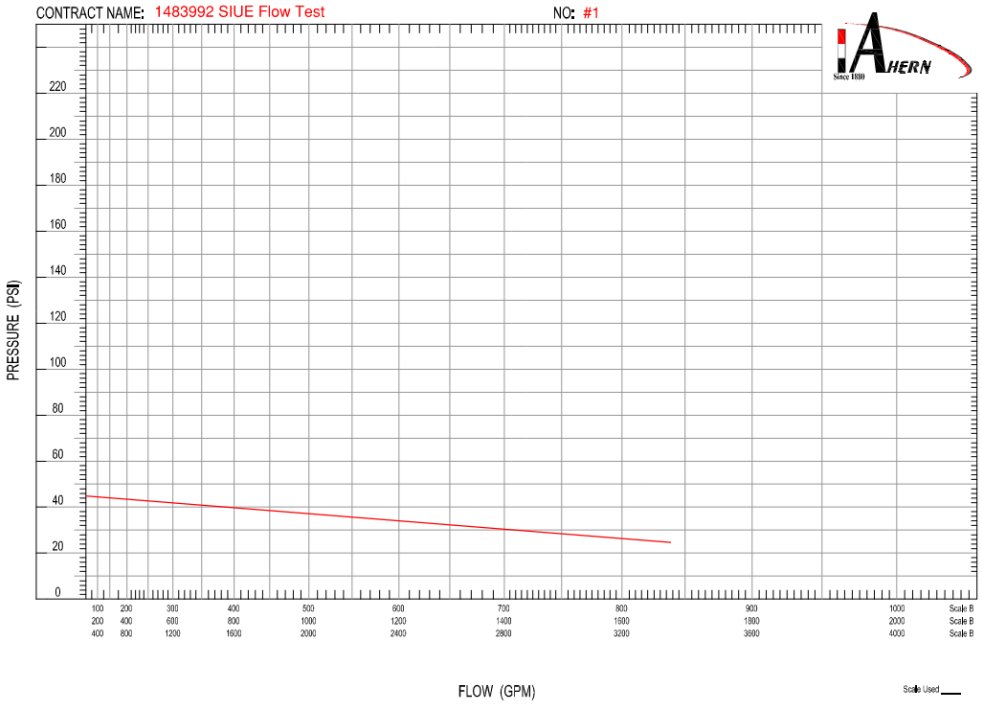
2.1.10.1 Figure 1: Fire Hydrant Locations



2.1.10.2 Testing Results

The tests were performed on October 21, 2021 and all three hydrants provided similar results as expected given their close proximity. Static pressures ranged from 45-50 psi and residual pressures ranged from 25-30 psi at a flow of 840 GPM. It was noted by Ahern that the pressure gauge briefly dropped near 0 psi and then recovered to pressure noted. This is something that is commonly seen when hydrants are at the end of a long dead-end run. Refer to attached full Ahern report for more details.

2.1.10.1 Figure 1: Flow Test Results



Prepared by: Angela Montgomery, Tony Zehnle, Philip Kikel

Flow Test Form

ADDRESS:	200 University Park Dr.	**DATE:**	October 21, 2021
PERFORMED BY:	P.J. & Randy w/ Ahern	**TIME:**	9:40 A.M.
OBSERVED BY:	Mike and Jeff w/ SIUE		

HYDRANT #(S): See attached Site Plan for reference
Flow Hydrant #27
Gauge Hydrant #25

STATIC PRESSURE: 45 PSI

RESIDUAL PRESSURE: 25 PSI

PITOT PRESSURE (p): 25

BUTT/ORIFICE OPENING SIZE (d): 2.5" (typical) ☐ Other

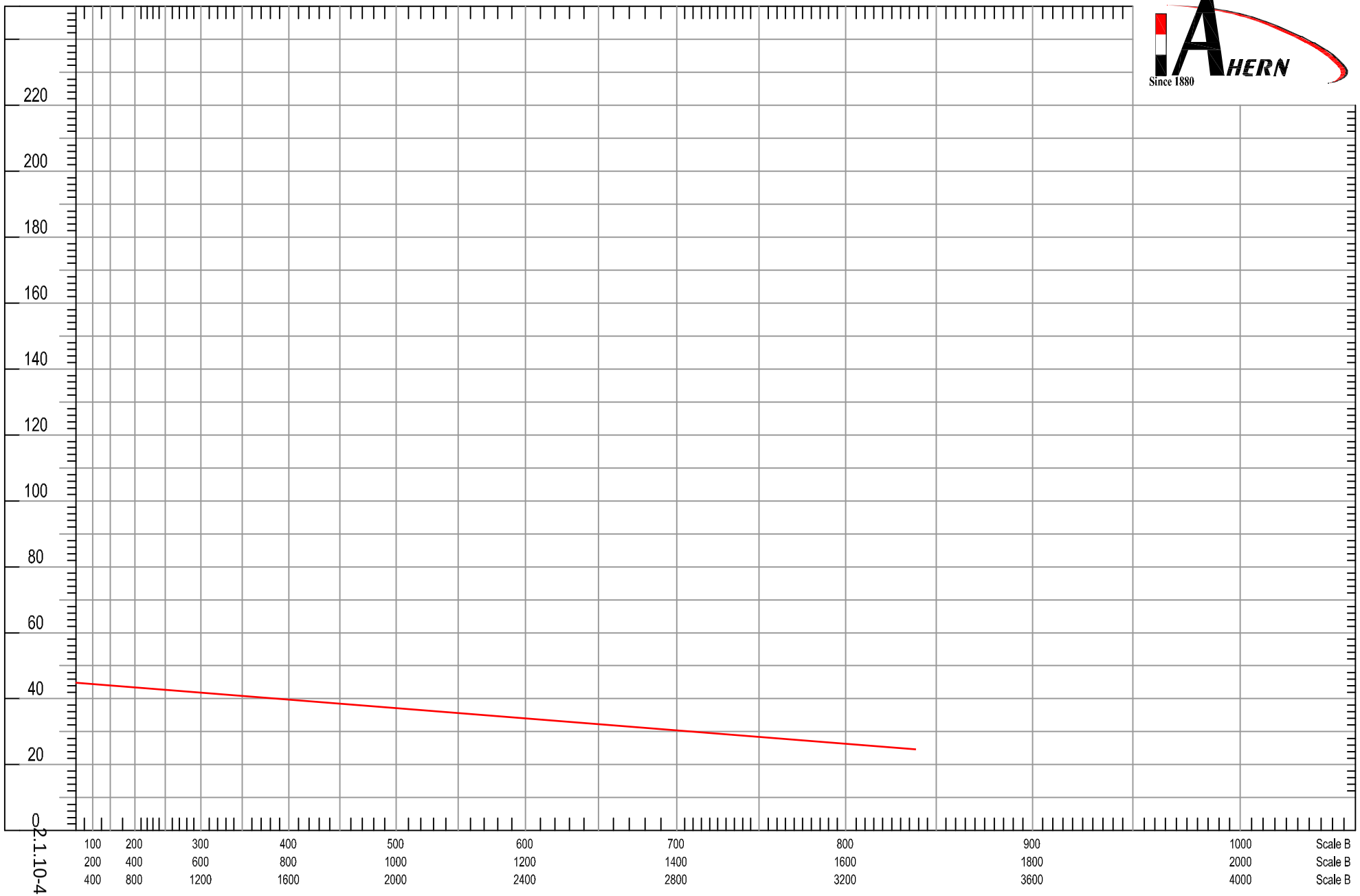
HYDRANT CO-EFFICIENT (c): ☒ 0.90 ☐ 0.80 ☐ 0.70

GPM $Q = 29.84cd^2\sqrt{p}$ (NFPA 291 4.7.3): 840

Note: Factory Mutual projects, a maximum Hydrant C-efficient of 0.80 is to be used to determine GPM flowing.

OBSERVATION NOTE: The Pressure Gauge on the Test Hydrant Briefly Dropped Near Zero Then Recovered to Pressure Noted Above.

CONTRACT NAME: 1483992 SIUE Flow Test NO: #1



AHERN Since 1880

2.1.10-4

Scale Used ____

Flow Test Form

ADDRESS:	200 University Park Dr.	**DATE:**	October 21, 2021
PERFORMED BY:	P.J. & Randy w/ Ahern	**TIME:**	9:50 A.M.
OBSERVED BY:	Mike and Jeff w/ SIUE		

	See attached Site Plan for reference
HYDRANT #(S):	Flow Hydrant #27
	Gauge Hydrant #26

STATIC PRESSURE:	50	PSI
RESIDUAL PRESSURE:	30	PSI
PITOT PRESSURE (p):	25	

BUTT/ORIFICE OPENING SIZE (d): 2.5" (typical) ☐ Other

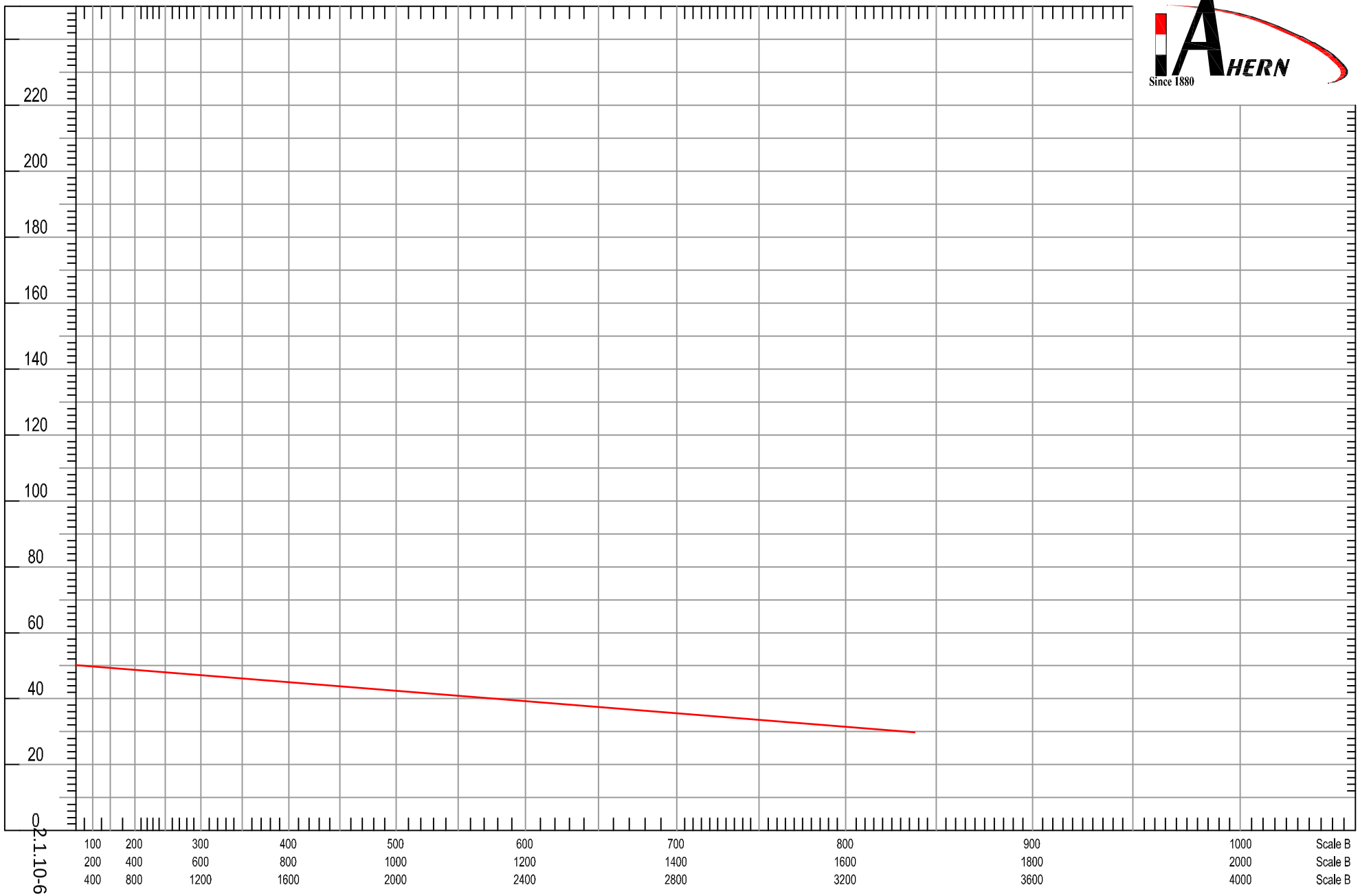
HYDRANT CO-EFFICIENT (c): ☒ 0.90 ☐ 0.80 ☐ 0.70

GPM $Q = 29.84cd^2\sqrt{p}$ (NFPA 291 4.7.3): 840

Note: Factory Mutual projects, a maximum Hydrant C-efficient of 0.80 is to be used to determine GPM flowing.

OBSERVATION NOTE: The Pressure Gauge on the Test Hydrant Briefly Dropped Near Zero Then Recovered to Pressure Noted Above.

CONTRACT NAME: 1483992 SIUE Flow Test NO: #2



Scale Used ____

Flow Test Form

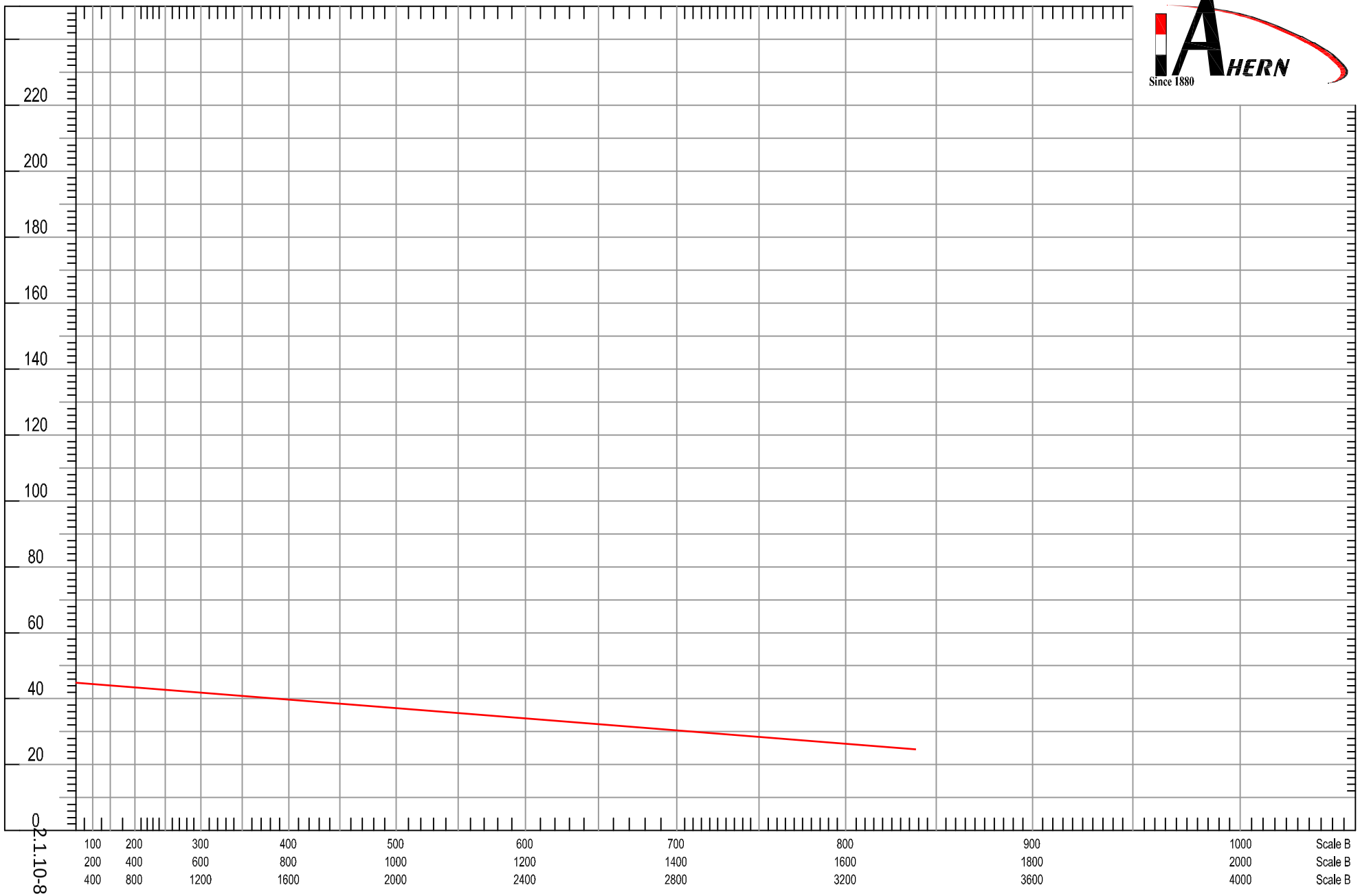
ADDRESS:	200 University Park Dr.	**DATE:**	October 21, 2021
PERFORMED BY:	P.J. & Randy w/ Ahern	**TIME:**	10:00 A.M.
OBSERVED BY:	Mike and Jeff w/ SIUE		

	See attached Site Plan for reference
HYDRANT #(S):	Flow Hydrant #26
	Gauge Hydrant #25
STATIC PRESSURE:	45 PSI
RESIDUAL PRESSURE:	25 PSI
PITOT PRESSURE (p):	25
BUTT/ORIFICE OPENING SIZE (d):	2.5" (typical) ☐ Other
HYDRANT CO-EFFICIENT (c):	☒ 0.90 ☐ 0.80 ☐ 0.70
GPM $Q = 29.84cd^2\sqrt{p}$ (NFPA 291 4.7.3)	840

Note: Factory Mutual projects, a maximum Hydrant C-efficient of 0.80 is to be used to determine GPM flowing.

OBSERVATION NOTE: The Pressure Gauge on the Test Hydrant Briefly Dropped Near Zero Then Recovered to Pressure Noted Above.

CONTRACT NAME: 1483992 SIUE Flow Test NO: #3



AHERN Since 1880

2.1.10-8

Scale Used ____

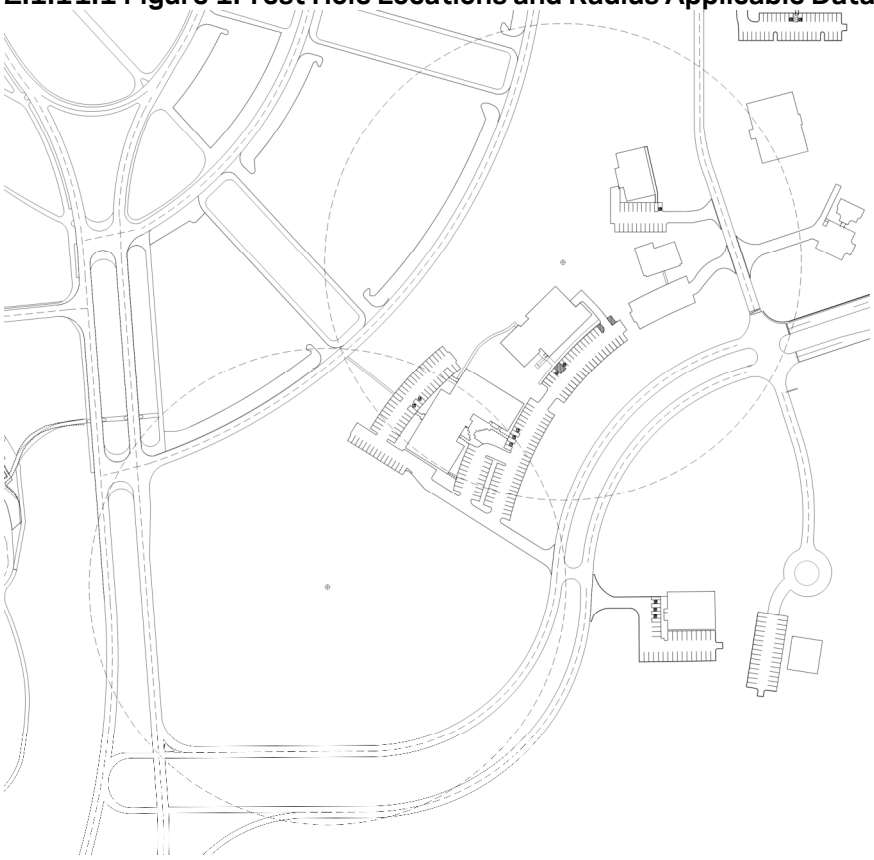

MATCH TO APPENDIX
#1 = flow F27, test F25
#2 = flow F27, test F26
#3 = flow F26, test F25
V-67
V-64
V-65
V-62
V-63
V-61
F-26
V-59
V-58
V-57
F-27
V-60
DW
6"
2"
12"
2.1.10-9

2.1.11 GEOTHERMAL CONDUCTIVITY TESTING RESULTS

2.1.11.1 Testing Locations

The bridging documents team collaborated to select two geothermal testing hole locations that will provide adequate data on multiple potential well field sites. The team attempted to select locations that would allow for the two-hole locations to be used as wells if the geothermal system is selected in the final design.

2.1.11.1 Figure 1: Test Hole Locations and Radius Applicable Data



2.1.11.2 Testing Results

Testing is still in progress at this time. Results are anticipated around mid-November. Once results are received, the bridging documents team will share with all the stakeholders. This data will still be received with plenty of time to incorporate into the HVAC system analysis effort that is part of the Schematic Design process.